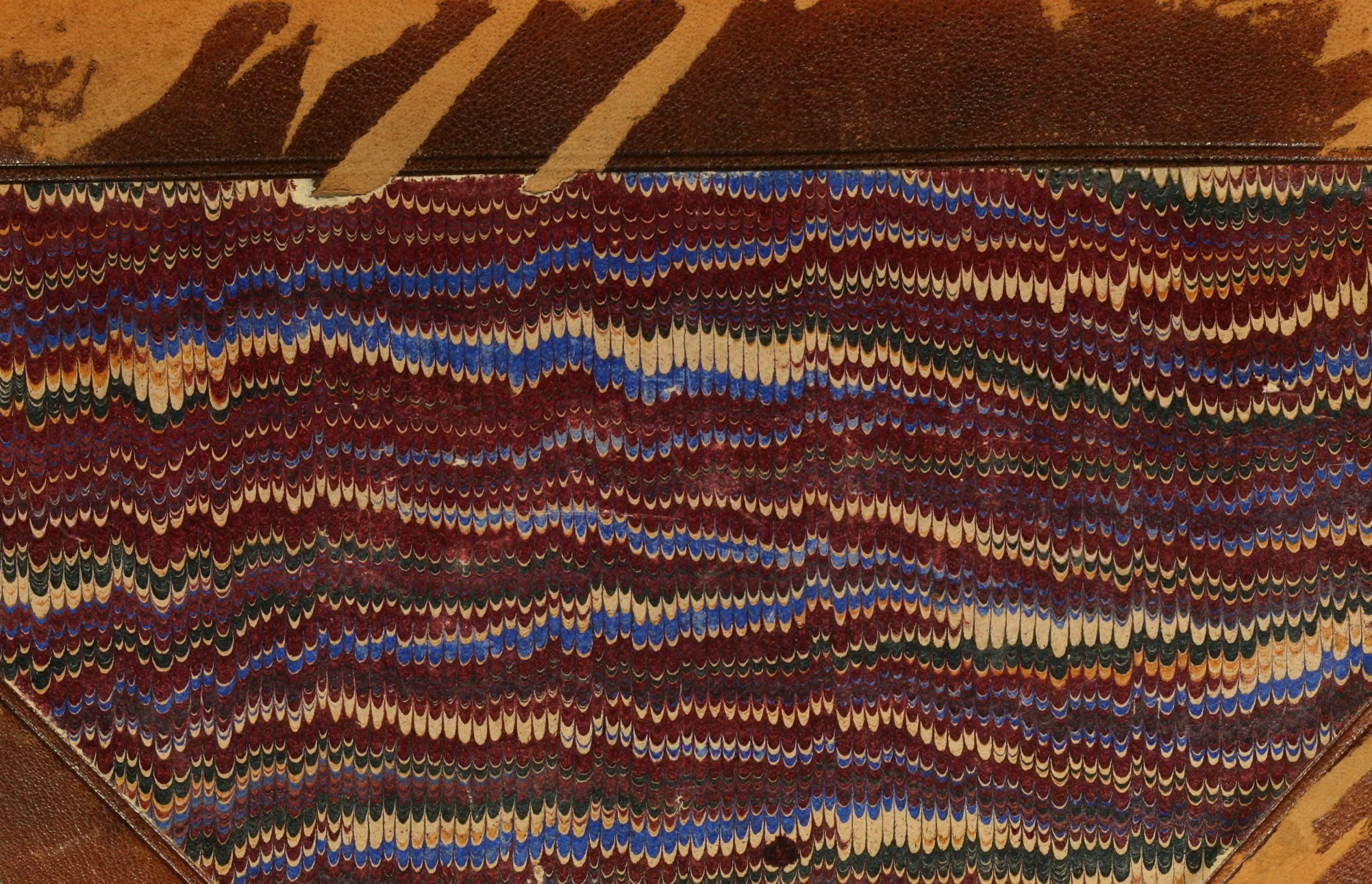

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NARRATIVE OF THE VOYAGE

OF

H.M.S. RATTLESNAKE,

COMMANDED BY THE LATE

CAPTAIN OWEN STANLEY, R.N., F.R.S. &c.

DURING THE YEARS 1846-1850.

INCLUDING DISCOVERIES AND SURVEYS IN

NEW GUINEA, THE LOUISIADE ARCHIPELAGO,

ETC.

TO WHICH IS ADDED THE ACCOUNT OF

MR. E. B. KENNEDY'S EXPEDITION

FOR THE EXPLORATION OF THE CAPE YORK PENINSULA.

Division of Mollusks
National Museum

BY JOHN MACGILLIVRAY, F.R.G.S.
NATURALIST TO THE EXPEDITION.

PUBLISHED UNDER THE
Sanction of the Lords Commissioners of the Admiralty.

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VOYAGE

OF

H. M. S. RATTLESNAKE.

CHAPTER I.

DISTRIBUTION OF ABORIGINAL TRIBES OF CAPE YORK AND TORRES STRAIT—MODE OF WARFARE ILLUSTRATED—THEIR SOCIAL CONDITION—TREATMENT OF THE WOMEN—PREVALENCE OF INFANTICIDE—EDUCATION OF A CHILD—MODE OF SCARIFYING THE BODY—INITIATION TO MANHOOD—THEIR CANOES, WEAPONS, AND HUTS—DRESS OF THE WOMEN—FOOD OF THE NATIVES—MODE OF FISHING—CAPTURE OF THE TURTLE AND DUGONG DESCRIBED—YAMS AND MODE OF CULTURE—EDIBLE ROOTS, FRUITS, ETC.—NO RECOGNISED CHIEFTAINSHIP—LAWS REGARDING PROPERTY IN LAND—BELIEF IN TRANSMIGRATION OF SOULS—THEIR TRADITIONS—DISEASES AND MODES OF TREATMENT—BURIAL CEREMONIES.

THERE are at least five distinct tribes of natives inhabiting the neighbourhood of Cape York. The Gúdang people possess the immediate vicinity of the Cape: the Yagulles* stretch along the coast to the

* This is the tribe concerned in the murder of the unfortunate Kennedy. The circumstances were related by some of the Yagulles to an old woman at Cape York of the name of Baki, who, when questioned upon the subject through Gi'om, partially

southward and eastward beyond Escape River: the Katchialaigas and Induyamos (or Yarudolaigas as the latter are sometimes called) inhabit the country behind Cape York, but I am not acquainted with the precise localities: lastly, the Gomokudins are located on the S. W. shores of Endeavour Strait, and extend a short distance down the Gulph of Carpentaria. These all belong to the Australian race as unquestionably as the aborigines of Western or South Australia, or the S. E. coast of New South Wales; they exhibit precisely the same physical characteristics which have been elsewhere so often described as to render further repetition unnecessary.

On the other hand, the tribes inhabiting the islands of Torres Strait differ from those of the mainland in belonging (with the exception of the first) to the Papuan or frizzled-haired race. Besides, probably, a few others of which I cannot speak with certainty, these tribes are distributed in the following manner. The Kowraregas inhabit the Prince of Wales' group: the Múralegas and Italegas divide between them Banks Island: the Badúlegas possess Mulgrave Island, and the Gúmúlegas the islands between the last and New Guinea: the Kúlkalegas have Mount Ernest and the Three Sisters:

corroborated the statement of Jackey Jackey. She further stated that a few years ago a Yagulle woman and child had been shot by some white men in a small vessel near Albany Island, and that the tribe were anxious to revenge their death. Whether this was a story got up as a palliative for the murder, or not, I cannot say.

the Massilegas* reside on the York Isles and others adjacent: and the Miriam† tribe hold the north-easternmost islands of Torres Strait, including Murray and Darnley Islands.

The junction between the two races, or the Papuan from the north and the Australian from the south, is effected at Cape York by the Kowraregas, whom I believe to be a Papuanized colony of Australians, as will elsewhere be shewn. In fact, one might hesitate whether to consider the Kowraregas‡ as Papuans or Australians, so complete is the fusion

* I do not know what name is given to the tribe or tribes inhabiting the space between the Miriam and the Kúlkalaig. Dzúm (a Darnley islander) told me of a tribe called Gamle inhabiting Owrid, Uta, Zogārid, Sirreb, Mêkek, and Wurber; at all events the natives of Massid belong to a distinct tribe, judging from their language, and are known as the Massilegas by the Kowraregas. They occasionally (as in 1848) come down to Cape York on a visit to the Australians there, often extending their voyage far to the southward, visiting the various sandy islets in search of turtle and remaining away for a month or more.

† Is so named from a place in Murray Island. The possessions of this tribe are Mêr, Dowar, Wayer, Errúb, Ugar, Zapker, and Edugor, all, except the two last, permanently inhabited.

‡ Dr. Latham informs me that the Kowrarega language is undeniably Australian, and has clearly shewn such to be the case: and although the Miriam language does not show any obvious affinity with the continental Australian dialects, yet the number of words common to it and the Kowrarega, I find by comparison of my vocabularies to be very considerable, and possibly, were we at all acquainted with the grammar of the former, other and stronger affinities would appear.

of the two races. Still the natives of the Prince of Wales' Islands rank themselves with the islanders and exhibit a degree of conscious superiority over their neighbours on the main land and with some show of reason; although themselves inferior to all the other islanders, they have at least made with them the great advance in civilization of having learned to cultivate the ground, a process which is practised by none of the Australian aborigines.

The Kowraregas speak of New Guinea under the name of Muggi' (little) Dowdai, while to New Holland they apply the term of Kei' (large) Dowdai. Their knowledge of the former island has been acquired indirectly through the medium of intervening tribes. The New Guinea people are said to live chiefly on pigs and sago; from them are obtained the cassowary feathers used in their dances, and stone-headed clubs. They trade with the Gumúlegas, who exchange commodities with the Badúlegas, from whom the Kowrarega people receive them. These last barter away to their northern neighbours spears, throwing-sticks, and mother-of-pearl shells for bows, arrows, bamboo pipes, and knives, and small shell ornaments called dibi-dibi. They have friendly relations with the other islanders of Torres Strait, but are at enmity with all the mainland tribes except the Gúdang.

Occasionally hostilities, frequently caused by the most trivial circumstances, arise between two neigh-

bouring tribes, when incursions are made into each other's territories, and reprisals follow. Although timely notice is usually given prior to an aggression being made by one tribe upon another, yet the most profound secrecy is afterwards practised by the invaders. As an illustration of their mode of warfare, in which treachery is considered meritorious in proportion to its success, and no prisoners are made, except occasionally, when a woman is carried off,—consisting chiefly in a sudden and unexpected attack, a short encounter, the flight of one party and the triumphant rejoicings of the other on their return—I may state the following on the authority of Gi'om.

About the end of 1848, an old Kowrarega man went by himself in a small canoe to the neighbourhood of Cape Cornwall, while the men of the tribe were absent turtling at the eastern end of Endeavour Strait. He was watched by a party of Gomokudin blacks or Yigeiles, who, guided by his fire, surprised and speared him. Immediately returning to the mainland, the perpetrators of this savage deed made a great fire by way of exultation. Meanwhile the turtling party returned, and when it became known that the old man had been missing for several days, they were induced by his two sons to search for him, and found the body horribly mutilated, with many spears stuck into it to shew who had been the murderers. This explained the fire, so another was lit in reply to the challenge, and at night a party of Kowraregas in six canoes, containing all the men

and lads of the tribe, crossed over to the main. They came upon a small camp of Yigeiles who had not been at all concerned in the murder, and enticed one of them to come out of the thicket where he had concealed himself by the offer of a fillet of cassowary feathers for information regarding the real murderers. As soon as the man stepped out, he was shot down with an arrow, his head cut off, and pursuit made after the rest. Towards morning their second camping place was discovered and surrounded, when three men, one woman, and a girl were butchered. The heads of the victims were cut off with the *húpi*, or bamboo knife, and secured by the *sringi*, or cane loop, both of which are carried slung on the back by the Torres Strait islanders and the New Guinea men of the adjacent shores, when on a marauding excursion;* these Papuans preserve the skulls of their enemies as trophies, while the Australian tribes merely mutilate the bodies of the slain, and leave them where they fall. The Kowraregas returned to their island with much exultation, announcing their approach by great shouting and blowing on conchs. The heads were placed on an oven and partially cooked, when the eyes were scooped out and eaten with portions of flesh cut from the cheek ;† only those, however, who had been pre-

* See Jukes' Voyage of the Fly, Vol. i. p. 277.

† The eyes and cheeks of the survivors from the wreck of the Charles Eaton (in Aug. 1834) were eaten by their murderers,—a party consisting of different tribes from the eastern part of Torres Strait. See Nautical Magazine, 1837, p. 799.

sent at the murder were allowed to partake of this; the morsel was supposed to make them more brave. A dance was then commenced, during which the heads were kicked along the ground, and the savage excitement of the dancers almost amounted to frenzy. The skulls were ultimately hung up on two cross sticks near the camp, and allowed to remain there undisturbed.

In the beginning of 1849 a party of Badúlegas who had spent two months on a friendly visit to the natives of Múralug treacherously killed an old Italega woman, married to one of their hosts. Two of her brothers from Banks Island were staying with her at the time, and one was killed, but the other managed to escape. The heads were carried off to Badu as trophies. This treacherous violation of the laws of hospitality was in revenge for some petty injury which one of the Badu men received from an Ita black several years before.

When a large fire is made by one tribe it is often intended as a signal of defiance to some neighbouring one—an invitation to fight—and may be continued daily for weeks before hostilities commence; it is answered by a similar one. Many other signals by smoke are in use: for example, the presence of an enemy upon the coast—a wish to communicate with another party at a distance—or the want of assistance—may be denoted by making a small fire, which, as soon as it has given out a little column of smoke, is suddenly extinguished by heaping sand

upon it. If not answered immediately it is repeated; if still unanswered, a large fire is got up and allowed to burn until an answer is returned.

Polygamy is practised both on the mainland and throughout the islands of Torres Strait. Five is the greatest number of wives which I was credibly informed had been possessed by one man,—but this was an extraordinary instance, one, two, or three, being the usual complement, leaving of course many men who are never provided with wives. The possession of several wives ensures to the husband a certain amount of influence in his tribe as the owner of so much valuable property, also from the nature and extent of his connections by marriage. In most cases females are betrothed in infancy, according to the will of the father, and without regard to disparity of age, thus the future husband may be and often is an old man with several wives. When the man thinks proper he takes his wife to live with him without any further ceremony, but before this she has probably had promiscuous intercourse with the young men, such, if conducted with a moderate degree of secrecy, not being considered as an offence, although if continued after marriage it would be visited by the husband (if powerful enough) upon both the offendin g parties wit the severest punishment.

Occasionally there are instances of strong mutual attachment and courtship, when, if the damsel is not betrothed, a small present made to the father is sufficient to procure his consent; at the Prince of

Wales Islands a knife or glass bottle are considered as a sufficient price for the hand of a "lady fair," and are the articles mostly used for that purpose.

According to Gi'om puberty in girls takes place from the tenth to the twelfth year, but few become mothers at a very early age. When parturition is about to take place the woman retires to a little distance in the bush, and is attended by an experienced matron. Delivery is usually very easy, and the mother is almost always able on the following day to attend to her usual occupations. The infant is laid upon a small soft mat which the mother has taken care to prepare beforehand, and which is used for no other purpose.

The life of a married women among the Kowrarega and Gúdang blacks is a hard one. She has to procure nearly all the food for herself and husband, except during the turtling season, and on other occasions when the men are astir. If she fails to return with a sufficiency of food, she is probably severely beaten,—indeed the most savage acts of cruelty are often inflicted upon the women for the most trivial offence. Considering the degraded position assigned by the Australian savages to their women, it is not surprising that the Prince of Wales Islanders should, by imitating their neighbours in this respect, afford a strong contrast to the inhabitants of Darnley and other islands of the N.E. part of Torres Strait, who always appeared to me to treat their females with much consideration

and kindness. Several instances of this kind of barbarity came under my own notice. Piaquai (before mentioned) when spoken to about his wife whom he had killed a fortnight before in a fit of passion, seemed much amused at the idea of having got rid of her unborn child at the same time. One morning at Cape York, Paida did not keep his appointment with me as usual; on making inquiry, I found that he had been squabbling with one of his wives a few minutes before, about some trifle, and had speared her through the hip and groin. On expressing my disapproval of what he had done, adding that white men never acted in that manner, he turned it off by jocularly observing that although *I* had only one wife, *he* had two, and could easily spare one of them. As a further proof of the low condition of the women, I may state that it is upon them that the only restrictions in eating particular sorts of food are imposed. Many kinds of fish, including some of the best, are forbidden on the pretence of their causing disease in women, although not injurious to the men. The hawksbill turtle and its eggs are forbidden to women suckling, and no female, until beyond child bearing, is permitted to eat of the Torres Strait pigeon.

Among other pieces of etiquette to be practised after marriage among both the Kowraregas and Gúdangs, a man must carefully avoid speaking to or even mentioning the name of his mother-in-law, and his wife acts similarly with regard to her

father-in-law. Thus the mother of a person called Núki—which means water—is obliged to call water by another name; in like manner as the names of the dead are never mentioned without great reluctance so, after the death of a man named Us, or quartz, that stone had its name changed into *nattam úre*, or the thing which is a namesake, although the original will gradually return to common use.

The population of Múralug is kept always about the same numerical standard by the small number of births, and the occasional practice of infanticide. Few women rear more than three children, and besides, most of those born before marriage are doomed to be killed immediately after birth, unless the father—which is seldom the case—is desirous of saving the child—if not, he gives the order *marăma teio* (throw it into the hole) and it is buried alive accordingly. Even of other infants some, especially females, are made away with in a similar manner when the mother is disinclined to support it.

An infant is named immediately after birth:—and, on Múralug, these names for the last few years have been chosen by a very old man named Guigwi. Many of these names have a meaning attached to them: thus, two people are named respectively Wapada and Passei, signifying particular trees, one woman is called Kúki, or the rainy season, and her son Ras, or the driving cloud. Most people have several names, for instance, old Guigwi was also called Salgai, or the firesticks, and Mrs. Thomson

was addressed as Kēsăgu, or Taōmai, by her (adopted) relatives, but as Gi(a)om by all others. Children are usually suckled for about two years, but are soon able, in a great measure, to procure their own food, especially shell fish, and when strong enough to use the stick employed in digging up roots, they are supposed to be able to shift for themselves. A peculiar form of head, which both the Kowrarega and Gúdang blacks consider as the beau ideal of beauty, is produced by artificial compression during infancy. Pressure is made by the mother with her hands—as I have seen practised on more than one occasion at Cape York—one being applied to the forehead and the other to the occiput, both of which are thereby flattened, while the skull is rendered proportionally broader and longer than it would naturally have been.*

When the child is about a fortnight old the perforation in the septum of the nose is made by drilling it with a sharp pointed piece of tortoise-shell, but the raised artificial scars, regarded as personal ornaments by the Australians and Torres Strait Islanders, are not made until long afterwards. According to Gi'om, who states that among the Kowraregas this scarification is purely voluntary, the patient is laid upon the ground and held there, while the incisions are made with a piece of glass

* Precisely the same form of skull as that alluded to at p. 189, vol. i.: hence it is not unreasonable to suppose that the latter might have been artificially produced.

by some old man famous for his skill in performing the operation. The chewed leaf of a certain plant (which, however, I could not identify) is introduced into the wound to prevent the edges from uniting, and a daub of wet clay is then placed over all, and kept there until the necessary effect has been produced. The principal scarifications among women at Cape York and Múralug are in the form of long lines across the hips. Among the men, however, there is considerable variety.

The characteristic mode of dressing the hair among the Torres Strait Islanders is to have it twisted up into long pipe-like ringlets, and wigs in imitation of this are also worn. Sometimes the head is shaved, leaving a transverse crest—a practice seldom seen among the men but not uncommon among women and children, from Darnley Island down to Cape York. At the last place and Múralug the hair is almost always kept short,—still caprice or fashion have their sway, for at Cape York I have at times for a week together seen all the men and lads with the hair twisted into little strands well daubed over with red ochre and turtle fat.

The Torres Strait Islanders are distinguished by a large complicated oval scar, only slightly raised, and of neat construction. This, which I have been told has some connection with a turtle, occupies the right shoulder, and is occasionally repeated on the left. At Cape York, however, the cicatrices were so varied, that I could not connect any particular

style with an individual tribe,—at the same time something like uniformity was noticed among the Katchialaigas, nearly all of whom had, in addition to the horned breast mark, two or three long transverse scars on the chest, which the other tribes did not possess. In the remaining people the variety of marking was such that it appeared fair to consider it as being regulated more by individual caprice than by any fixed custom. Many had a simple two-horned mark on each breast, and we sometimes saw among them a clumsy imitation of the elaborate shoulder mark of the islanders.

The custom of undergoing a certain mysterious ceremony prior to being admitted to the privileges of manhood, supposed to be an institution peculiar to the Australians, is found among the Kowraregas, but whether it extends throughout Torres Strait is uncertain. This initiation is not at Cape York and Múralug accompanied by the performance either of circumcision or the knocking out of a tooth, as in many parts of Australia. The boys, usually three or four in number, are chased about in the bush during the day by some of the men decked out with feathers and other ornaments, and at night retire to the men's camp, for, during the whole time of their novitiate – or about a month—they must on no account be seen by a woman; in fact, as Gi'om informed me, a woman coming upon these *kernēle* —as they are called—no matter how accidentally, would be immediately put to death. When all is

over the lads return to their parents, decorated with a profusion of ornaments which are worn until they drop off, and wearing in front a small triangular piece of shell as a distinguishing mark.

The same kind of canoe which is found throughout Torres Strait has been seen to extend from Cape York along the eastern coast as far south as Fitzroy Island,* a distance of 500 miles. It essentially consists of a hollowed-out log, a central platform, and an outrigger on each side. The largest canoes which I have seen are those of the Murray and Darnley Islanders, occasionally as much as sixty feet long; those of the Australians are small, varying at Cape York between fifteen and thirty feet in

* At the latter place we found a small canoe with two outriggers concealed on shore among some bushes. The bark canoes of Rockingham Bay have already been described. About Whitsunday Passage the canoes, also of bark, are larger and of neater construction: one which I examined at the Cumberland Isles was made of three pieces of bark neatly sewn together; it was six feet long and two and a half feet wide, sharp at each end, with a wooden thwart near the stem and stern, and a cord amidships to keep the sides from stretching. In the creeks and bays of the now settled districts of New South Wales another kind of canoe was once in general use. At Broken Bay, in August, 1847, a singular couple of aborigines whom I met upon a fishing excursion had a small canoe formed of a single sheet of bark tied up at each end; on the floor of this they were squatted, with the gunwale not more than six inches above the water's edge. Yet this frail bark contained a fire, numbers of spears, fishing lines and other gear. The woman was a character well known in Sydney—Old Gooseberry—said to be old enough to have remembered Cook's first visit to these shores.

length. Even the Kowraregas have much finer canoes than their neighbours on the mainland; one which I measured alongside the ship was forty-five feet long and three and a half in greatest width, and could carry with ease twenty-five people. The construction of a canoe in the neighbourhood of Cape York is still looked upon as a great undertaking, although the labour has been much lessened by the introduction of iron axes, which have completely superseded those of stone formerly in use. A tree of sufficient size free from limbs—usually a species of *Bombax* (silk-cotton tree) or *Erythrina*—is selected in the scrub, cut down, hollowed out where it falls, and dragged to the beach by means of long climbers used as ropes. The remaining requisites are now added; two stout poles, fourteen to twenty feet in length, are laid across the gunwale, and secured there from six to ten feet apart, and the projecting ends are secured by lashing and wooden pegs to a long float of light wood on each side, pointed, and slightly turned up at the ends. A platform or stage of small sticks laid across occupies the centre of the canoe, extending on each side several feet beyond the gunwale, and having on the outside a sort of double fence of upright sticks used for stowing away weapons and other gear. The paddles are five feet long, with a narrow rounded blade, and are very clumsily made. The cable is made of twisted climbers—often the *Flagellaria Indica*—and a large stone serves for an anchor.

When desirous of making sail, the first process is to set up in the bow two poles as masts, and on the weather side a longer and stouter one is laid across the gunwale, and projects outwards and backwards as an outrigger. These are further supported by stays and guys, and, together with another long pole forked at the end, serve as a frame to support the pressure of the sails, which are usually two in number, made of matting of pandanus leaves, and average four and a half feet in width and twelve in height. The sails have a slender pole on each side to which the matting is secured by small pegs; when set, they are put up on end side by side, travelling along the backstay by means of a cane gromet. When blowing fresh it is usual to keep a man standing on the temporary outrigger to counteract by his weight the inclination of the canoe to leeward. From the whole sail being placed in the bow these canoes make much leeway, but when going free may attain a maximum speed of seven or eight knots an hour. Except in smooth water they are very wet, and the bailer (a melon shell) is in constant requisition.

The inhabitants of the mainland and Prince of Wales Islands use the spear and throwing-stick, but throughout the remainder of Torres Strait bows and arrows are the chief weapons. The bows, which are large and powerful, are made of split bamboo, and the arrows of a cane procured from New Guinea, afterwards headed with hard wood variously pointed

and sometimes barbed. The Kowraregas obtain bows and arrows from their northern neighbours, and occasionally use them in warfare, but prefer the spears which are made by the blacks of the mainland. We saw three kinds of spear at Cape York; one is merely a sharpened stick used for striking fish, the two others, tipped and barbed with bone, are used in war. The principal spear (*kalak* or *alka*) measures about nine feet in length, two-thirds of which are made of she-oak or casuarina, hard and heavy, and the remaining third of a soft and very light wood; one end has a small hollow to receive the knob of the throwing-stick, and to the other the leg-bone of a kangaroo six inches long, sharpened at each end, is secured in such a manner as to furnish a sharp point to the spear and a long barb besides. Another spear, occasionally used in fighting, has three or four heads of wood each of which is tipped and barbed with a smaller bone than is used for the *kalak*.

The throwing-stick in use at Cape York extends down the N.E. coast at least as far as Lizard Island; it differs from those in use in other parts of Australia in having the projecting knob for fitting into the end of the spear parallel with the plane of the stick and not at right angles. It is made of casuarina wood, and is generally three feet in length, an inch and a quarter broad, and half an inch thick. At the end a double slip of melon shell, three and a half inches long, crossing diagonally, serves as a

handle, and when used, the end rests against the palm of the right hand, the three last fingers grasp the stick, and the forefinger and thumb loosely retain the spear. With the aid of the powerful leverage of the throwing-stick a spear can be thrown to a distance varying according to its weight from 30 to 80 yards, and with considerable precision; still, if observed coming, it may easily be avoided.

The only other weapon which I have seen in Torres Strait is a peculiar kind of club procured from New Guinea, consisting of a quoit-like disk of hard stone (quartz, basalt, or serpentine), with a sharp edge, and a hole in the centre to receive one end of a long wooden handle.

The huts which the Kowraregas and Cape York people put up when the rains commence are usually dome-shaped, four to six feet high, constructed of an arched framework of flexible sticks, one end of each of which is stuck firmly in the ground, and over this sheets of tea-tree (*Melaleuca*) bark—and sometimes an additional thatch of grass—are placed until it is rendered perfectly water-tight.

Not only at Cape York but throughout Torres Strait the males use no clothing or covering of any kind. At Cape York and the Prince of Wales Islands grown up females usually wear a covering in front, consisting of a tuft of long grass, or flag (*Philydrum lanuginosum*), or split pandanus leaves, either hanging loosely or passed between the legs and tied to another behind; over this a short petti-

coat of fine shreds of pandanus leaf, the ends worked into a waistband, is sometimes put on, especially by the young girls, and when about to engage in dancing. This petticoat, varying only in the materials from which it is made, is in general use among the females of all the Torres Strait tribes except the Kowrarega, and much labour is often expended upon its construction. The large mats used as sails, also for sleeping under in wet weather, are made by the women from the fallen leaves of the pandanus,—the common basket from the rush-like leaves of *Xerotes Banksii?*—and the water basket from the sheath of the leaf of the Seaforthia palm.

The food of these blacks varies with the season of the year, and the supply is irregular and often precarious. Shell fish and fish are alone obtainable all the year round,—collecting the former is exclusively a female occupation, but fishing is chiefly practised by the men. Fish are either killed with a plain pointed spear, often merely a stick sharpened at the end, or are taken in deep water with the hook and line. Their hooks are made of a strip of tortoise-shell so much curved as to form three-fourths of a circle, but from their shape and the absence of a barb they cannot be so effective as those of European make: indeed these last were at Cape York preferred by the natives themselves. The line is neatly made from the tough fibres of the rattan, which are first scraped to the requisite

degree of fineness with a sharp edged Cyrena shell, then twisted and laid up in three strands.

Turtle forms an important article of food, and four different kinds are distinguished at Cape York and the Prince of Wales Islands. Three of these can be identified as the Green, the Hawksbill, and the Loggerhead species, and the fourth is a small one which I never saw. This last, I was informed by Gi'om, is fished for in the following extraordinary manner. A live sucking fish (*Echeneis Remora*), having previously been secured by a line passed round the tail, is thrown into the water in certain places known to be suitable for the purpose; the fish while swimming about makes fast by its sucker to any turtle of this small kind which it may chance to encounter, and both are hauled in together!

The green turtle is of such consequence to the natives that they have distinguished by a special name taken from the animal itself (*súlangi* from *súlur*) the season of the year when it is most plentiful; this, at Cape York, usually extends from about the middle of October until the end of November, but the limits are not constant. During the season they are to be seen floating about on the surface of the water, often in pairs, male and female together. A few are caught at night on the sandy beaches, but the greater number are captured in the water. The canoes engaged in turtling, besides going about in the day, are often sent out on calm moonlight nights. When a turtle is perceived, it is

approached from behind as noiselessly as possible,—when within reach, a man in the bow carrying the end of a small rope jumps out, and, getting upon the animal's back, with a hand on each shoulder, generally contrives to turn it before it has got far and secure it with the rope. This operation requires considerable strength and courage, in addition to the remarkable dexterity in diving and swimming possessed by all the blacks of the north-east coast and Torres Strait. There are some favourite look-out stations for turtle where the tide runs strongly off a high rocky point. At many such places, distinguished by large cairns* of stones, bones of turtle, dugongs, &c, watch is kept during the season, and, when a turtle is perceived drifting past with the tide, the canoe is manned and sent in chase.

With their usual improvidence, the Australians, when they take a turtle, feast upon it until all has been consumed and the cravings of hunger induce them to look out for another; but the Torres Strait

* One of these on Albany Rock is a pile of stones, five feet high and seven wide, mixed up with turtle's and human bones, and, when I last saw it, it was covered with long trailing shoots of *Flagellaria Indica* placed there by a turtling party to ensure success, as I was told, but how, was not explained. The human bones were the remains of a man killed there many years ago by a party of Kowraregas who took his head away with them. The mounds described and figured in Jukes' Voyage of the Fly (Vol. i. pp. 137, 138) and considered by us at the time to be graves, are merely the usual cairns at a look-out place for turtle.

Islanders are accustomed to dry the flesh to supply them with food during their voyages. The meat is cut into thin slices, boiled in a melon shell, stuck upon skewers, and dried in the sun. Prepared in this manner it will keep for several weeks, but requires a second cooking before being used, on account of its hardness and toughness. The fat which rises to the surface during the boiling is skimmed off and kept in joints of bamboo and turtle's bladders, being much prized as food; I have even seen the natives drink it off in its hot fluid state with as much gusto as ever alderman enjoyed his elaborately prepared turtle soup.

The hawksbill turtle (*Caretta imbricata*), that chiefly producing the tortoise-shell of commerce, resorts to the shores in the neighbourhood of Cape York later in the season than the green species, and is comparatively scarce. It is only taken at night when depositing its eggs in the sand, as the sharpness of the margin of its shell renders it dangerous to attempt to turn it in the water,—indeed even the green turtle, with a comparatively rounded margin to the carapace, occasionally, in struggling to escape, inflicts deep cuts on the inner side of the leg of its captor, of which I myself have seen an instance. Of the tortoise-shell collected at Cape York and the Prince of Wales Islands a small portion is converted into fish-hooks, the rest is bartered either to Europeans or to the Island blacks, who fashion it into various ornaments.

Another favourite article of food is the dugong, (*Halicore Australis*) of which a few are killed every year. Although it extends along the east coast of Australia from Moreton Bay to Cape York, it appears to be nowhere very common. About Cape York and Endeavour Strait, the dugong is most frequently seen during the rainy season, at which time it is said by the natives to bring forth its young. When one is observed feeding close inshore* chase is made after it in a canoe. One of the men standing up in the bow is provided with a peculiar instrument used solely for the capture of the animal in question. It consists of a slender peg of bone, four inches long, barbed all round, and loosely slipped into the heavy, rounded, and flattened head of a pole, fifteen or sixteen feet in length; a long rope an inch in thickness, made of the twisted stems of some creeping plant, is made fast to the peg at one end, while the other is secured to the canoe. When within distance, the bowman leaps out, strikes the dugong, and returns to the canoe with the shaft in his hand. On being struck, the animal dives, carrying out the line, but generally rises to the surface and dies in a few minutes, not requiring a second wound, a circumstance surprising in the case of a cetaceous animal, six or eight feet in length, and of proportionate bulk. The carcass is towed on

* A slender, branchless, cylindrical, articulated sea weed, of a very pale green colour, was pointed out to me by a native as being the favourite food of the dugong.

shore and rolled up the beach, when preparations are made for a grand feast. The flesh is cut through to the ribs in thin strips, each with its share of skin and blubber, then the tail is removed and sliced with a sharp shell as we would a round of beef. The blubber is esteemed the most delicate part; but even the skin is eaten, although it requires much cooking in the oven.

This oven is of simple construction—a number of stones, the size of the fist, are laid on the ground, and a fire is continued above them until they are sufficiently hot. The meat is then laid upon the bottom layer with some of the heated stones above it, a rim of tea-tree bark banked up with sand or earth is put up all round, with a quantity of bark, leaves, or grass on top, to retain the steam, and the process of baking goes on. This is the favourite mode of cooking turtle and dugong throughout Torres Strait, and on the east coast of the mainland I have seen similar fire places as far south as Sandy Cape.

A great variety of yam-like tubers are cultivated in Torres Strait. Although on Murray and Darnley and other thickly peopled and fertile islands a considerable extent of land in small patches has been brought under cultivation, at the Prince of Wales Islands the cleared spots are few in number, and of small extent,—nor does the latter group naturally produce either the cocoa-nut or bamboo, or is the culture of the banana attempted. On the main

land again I never saw the slightest attempt at gardening.

The principal yam, or that known by the names of *kútai* and *ketai*, is the most important article of vegetable food, as it lasts nearly throughout the dry season. Forming a yam garden is a very simple operation. No fencing is required,—the patch of ground is strewed with branches and wood, which when thoroughly dry are set on fire to clear the surface,—the ground is loosely turned up with a sharpened stick, and the cut pieces of yam are planted at irregular intervals, each with a small pole for the plant to climb up. These operations are completed just before the commencement of the wet season, or in the month of October.

When the rains set in the *biyu* becomes the principal support of the Cape York and Múralug people. This is a grey slimy paste procured from a species of mangrove (*Candelia ?*) the sprouts of which, three or four inches long, are first made to undergo a process of baking and steaming—a large heap being laid upon heated stones, and covered over with bark, wet leaves, and sand—after which they are beaten between two stones, and the pulp is scraped out fit for use. It does not seem to be a favourite food, and is probably eaten from sheer necessity. Mixed up with the *biyu* to render it more palatable they sometimes add large quantities of a leguminous seed, the size of a chestnut, which has previously been soaked for a night in water, and the husk removed,

or the tuber of a wild yam (*Dioscorea bulbifera*), cut into small pieces, and well steeped in water to remove its bitter taste.

Among the edible fruits of Cape York I may mention the *leăra*, a species of *Anacardium* or cashew nut (the *lûrgala* of Port Essington), which after being well roasted to destroy its acridity has somewhat the taste of a filbert,—the *clāri* (a species of *Wallrothia*), the size of an apricot, soft and mealy, with a nearly insipid but slightly mawkish taste,—*wobar*, the small, red, mealy fruit of *Mimusops Kaukii*,—and the *apīga* (a species of *Eugenia*), a red, apple-like fruit, the pericarp of which has a pleasantly acid taste. The fruit of two species of pandanus yields a sweet mucilage when sucked, and imparts it to water in which it has been soaked, after which it is broken up between two stones, and the kernels are extracted and eaten.

Throughout Australia and Torres Strait, the existence of chieftainship, either hereditary or acquired, has in no instance of which I am aware been clearly proved: yet in each community there are certain individuals who exercise an influence over the others which Europeans are apt to mistake for real authority. These so-called chiefs, are generally elderly men, who from prowess in war, force of character, or acknowledged sagacity, are allowed to take the lead in everything relating to the tribe. In Torres Strait such people are generally the owners of large canoes, and several wives; and in

the northern islands, of groves of cocoa-nut trees, yam grounds, and other wealth. Among the Kowraregas, there are, according to Gi'om, three principal people, Mamu, Piaquai, and Baki, all old men, but among the Gúdangs, a young man of twenty-five of the name of Tumagugo appeared to have the greatest influence, and next to him Paida, not more than six or eight years older.

It seems curious to find at Cape York and the Prince of Wales Islands a recognised division and ownership of land, seeing that none of it by cultivation has been rendered fit for the permanent support of man. According to Gi'om, there are laws regulating the ownership of every inch of ground on Múralug and the neighbouring possessions of the Kowraregas, and I am led to believe such is likewise the case at Cape York. Among these laws are the following. A person has a claim upon the ground where both himself and his parents were born, although situated in different localities. On the death of parents their land is divided among the children, when both sexes share alike, with this exception, that the youngest of the family receives the largest share. Marriage does not affect the permanency of the right of a woman to any landed property which may have come into her possession. Lastly, an old man occasionally so disposes of his property that a favourite child may obtain a larger proportion than he could afterwards claim as his inheritance.

Neither at Cape York, nor in any of the Islands of Torres Strait, so far as I am aware, do the aborigines appear to have formed an idea of the existence of a Supreme Being; the absence of this belief may appear questionable, but my informant, Gi'om, spoke quite decidedly on this point, having frequently made it the subject of conversation with the Kowrarega blacks. The singular belief in the transmigration of souls, which is general among the whole of the Australian tribes, so far as known, also extends to the islands of Torres Strait. The people holding it imagine that, immediately after death, they are changed into white people or Europeans, and as such pass the second and final period of their existence; nor is it any part of this creed that future rewards and punishments are awarded. It may readily be imagined that when ignorant and superstitious savage tribes, such as those under consideration, were first visited by Europeans, it was natural for them to look with wonder upon beings so strangely different from themselves, and so infinitely superior in the powers conferred by civilization, and to associate so much that was wonderful with the idea of supernatural agency. At Darnley Island, the Prince of Wales Islands, and Cape York, the word used at each place to signify a white man, also means a ghost.* The Cape York people even went

* Frequently when the children were teasing Gi'om, they would be gravely reproved by some elderly person telling them to leave her, as "poor thing! she is *nothing*, only a ghost!" *(igur! uri longa, mata markai.)*

so far as to recognise in several of our officers and others in the ship, the ghosts of departed friends to whom they might have borne some fancied resemblance, and, in consequence, under the new names of Tamu, Tarka, &c. they were claimed as relations, and entitled to all the privileges of such.

Among many superstitions held by the Prince of Wales islanders, they are much afraid of shooting stars, believing them to be ghosts which in breaking up produce young ones of their own kind. After sneezing, they make violent gestures with the hands and arms; if a joint cracks, they imagine that some one is speaking of them or wishing them well in the direction in which the arm is pointing.

The only tradition which I heard of occurs among the Kowraregas, and is worth mentioning for its singularity. The first man created was a great giant named Adi, who, while fishing off Hammond Island, was caught by the rising tide and drowned, Hammond Rock springing up immediately after to mark the spot. His wives, who were watching him at the time, resolved to drown themselves, and were changed into some dry rocks upon an adjacent reef named after them Ipīle, or the wives.

According to Gi'om ague is prevalent in Múralug during the rainy season, but is not much dreaded, as it is supposed to remove former complaints, such as the sores prevalent among children. At Cape York I have seen people affected with this complaint, but to what extent it occurs in that neigh-

bourhood I cannot state. One day some people from the ship saw our friend Tumagugo under treatment for ague. He was laid upon the ground while several men in succession took his head between their knees and kneaded it with their hands. After this they placed him close to a fire and sprinkled water over him until a copious perspiration broke out, denoting the third and last stage of the attack. Boils on various parts of the body, even on the head, are prevalent, especially during the rainy season, when the food is of a poorer description than at other times. Children are most subject to them, and I have more than once seen them so covered with offensive sores as to be rendered most disgusting objects. In old people callosities frequently form on the hip and elbows, the effect, probably, of sleeping on the ground. Scarification of the affected part is a common mode of treating local inflammatory complaints. Ligatures are also used, as for example, one across the forehead to remove head-ache. A singular mode of treating various complaints consists in attaching one end of a string to the patient, while the other is held in the mouth of a second person, who scarifies his own gums at the same time until they bleed, which is supposed to indicate that the "bad blood" has passed from the sick to the sound person.

With regard to the curious burial ceremonies of the Kowraregas, I regret that I cannot be so explicit as might otherwise have been the case, as Gi'om's information on this subject, and on this only,

was not written down at the time. When the head of a family dies at Múralug, the body is laid out upon a frame work of sticks raised a foot from the ground, and is there allowed to rot. A small hut is raised close by, and the nearest relative of the deceased lives there, supplied with food by his friends, until the head of the corpse becomes nearly detached by the process of putrefaction, when it is removed and handed over to the custody of the eldest wife. She carries it about with her in a bag during her widowhood, accompanying the party of the tribe to which she belongs from place to place. The body, or rather the headless skeleton, is then interred in a shallow grave over which a mound is raised ornamented by wooden posts at the corners painted red, with sometimes shells, and other decorations attached to them, precisely such a one as that figured in the Voyage of the Fly, vol. i. p. 149. On the occasion of our visiting the grave in question (at Port Lihou, on Múralug), Gi'om told me that we were closely watched by a party of natives who were greatly pleased that we did not attempt to deface the tomb; had we done so—and the temptation was great to some of us, for several fine nautilus shells were hanging up, and some good dugong skulls were lying upon the top—one or more of the party would probably have been speared.

CHAPTER II.

SAIL FROM CAPE YORK—MOUNT ERNEST DESCRIBED—FIND KULKALEGA TRIBE ON SUE ISLAND—FRIENDLY RECEPTION AT DARNLEY ISLAND, AND PROCEEDINGS THERE—BRAMBLE CAY AND ITS TURTLE—STAY AT REDSCAR BAY—FURTHER DESCRIPTION OF THE NATIVES, THEIR CANOES, ETC.—PASS ALONG THE SOUTH-EAST COAST OF NEW GUINEA—CALL AT DUCHATEAU ISLANDS—PASSAGE TO SYDNEY—GENERAL REMARKS REGARDING NEW GUINEA AND THE LOUISIADE ARCHIPELAGO—OBSERVATIONS ON GEOLOGY AND ETHNOLOGY—ORIGIN OF THE AUSTRALIANS CONSIDERED.

Dec. 3rd.—At length we have bade a final adieu to Cape York, after a stay of upwards of two months, which have passed away very pleasantly to such of us as were in the habit of making excursions in the bush, or who spent much of their time on shore. We are now on our way to Sydney, by way of Torres Strait, New Guinea and the Louisiade, chiefly for the purpose of running another set of meridian distances, the position of Cape York being now sufficiently well determined to serve as a secondary meridian, one of the starting points of the survey. The natives learned at daylight that we were to leave them in a few hours, so in order to make the most of their last opportunity of getting *bisiker* and *choka*, they hauled a large canoe across

the dry sands after much trouble, and under the direction of Baki, who affected great grief at the prospect of parting with us, went off to the ship.

We sailed at 8 A.M. for Mount Ernest—at which place a round of theodolite angles was required—and in the afternoon anchored off its south-western side in nine fathoms, one mile off shore. A solitary native was seen at work upon a canoe near the beach, but when a boat approached the shore he withdrew. The canoe was about half finished, and close by was a small shed of bamboo thatched with grass. After crossing a small sandy plain covered with short grass growing in tufts, we met the native on the edge of a brush to which he had slowly retired in order to pick up his spears and throwing stick, both of which were precisely similar to those of Cape York, from which place they had probably been procured. He was a quiet, sedate, good-natured old man, and although at first rather shy he soon laid aside his fears on receiving assurances in the Kowrarega language, which he understood, that *markai poud Kulkalaig Nagir* (the white men are friends of the Kúlkalega tribe of Mount Ernest), backed by a present of some biscuit and a knife. On subsequent occasions, when accompanying us from place to place, the quiet listless apathy of the old fellow was a source of some amusement. He did what was told him, and exhibited little curiosity, and scarcely any surprise at the many wonderful things we shewed him—such as shooting

birds with a gun, and procuring a light from a lucifer match.

On the following day I had an opportunity of examining the whole of the northern or inhabited side of the island. Mount Ernest is little more than a mile in greatest length, of a somewhat triangular shape, its eastern and larger portion hilly, rising gradually to an elevation of 751 feet, and its western part low and sandy. The rock is grey sienite, and from the striking similarity of aspect, it appeared to me pretty certain that Pole, Burke, and Banks Islands are of the same formation; they agree in exhibiting massive peaks, respectively 409, 490, and 1246 feet in height.

Mount Ernest is the head quarters of the Kúlkalega tribe of Torres Strait Islanders who are now absent on one of their periodical migrations, leaving in possession only the old man whom we met yesterday, and his family, among whom is a daughter of rather prepossessing appearance for a female of her race. The village consists of a single line of huts, which would furnish accommodation for, probably, 150 people. It is situated on the north-west, or leeward side of the island, immediately behind the beach, and in front of a belt of jungle. The huts are long and low, with an arched roof, and vary in length from ten to twenty feet, with an average height of five feet, and a width of six. They consist of a neat framework of strips of bamboo, thatched with long coarse grass. Each

hut is usually situated in a small well-fenced enclosure, and opposite to it on the beach is the cooking place, consisting of a small shed, under which the fire is made. We saw indications of many turtle having lately been cooked here upon a framework of sticks over a small fire, precisely as is practised by the natives of New Guinea and the Louisiade Archipelago.

The strip of forest behind the village is traversed in every direction by well beaten paths, chiefly leading to the back part of the island, where, on the slope of a hill in good soil, we found many patches of rude cultivation. The chief plant is a broad-leaved species of yam, trained upon tall poles kept in position by cross bamboos, forming a framework divided into little squares, each of which contains a plant. A species of *Calladium* with an esculent root is also much cultivated; it is planted in regular rows with the earth heaped up in ridges, as in a potato or turnip field at home. I noticed some small plots of ground prepared with more than usual care for the growth of what Gi'om told me was an herb used as tobacco; the young plants were protected from the sun with pieces of matting.

Not far from the village, under the shade of an aged mimusops tree on the outskirts of the wood, we observed a cleared oval space where ten human skulls—of former members of the tribe, as we were informed—were arranged upon a plank raised on stones a foot or so from the ground. The skulls

T Hurley, delt

Ridlmandel & Walton, Litho

FOREST SCENE, MOUNT FIRST, TOKEE STRAIT

T &W Boone, Publishers, London, 1852

were mostly old and weather-worn, and some of them had pandanus seeds stuck in the orbits by way of eyes. In front was a large smooth stone painted red and black, and partially imbedded in the earth, and beside it were some painted human leg and arm bones, shells and other ornaments. Behind, some thirty or forty skulls of turtle were arranged on the ground in several rows forming a triangle.

In a beautiful opening among the trees behind the village we saw an extraordinary screen—named *rows*—the purpose of which, so far as we could understand, had some connexion with the memory of the dead. It extended fifty-six feet in length, with a slight outward curvature, and measured five feet and a half in height. It was formed of a row of poles stuck in the ground, crossed in front by three horizontal strips of bamboo, and covered with cross lattice work. The bars of the screen were daubed over with red paint, and hung with rows of spider shells also painted red. Some poles projecting above the others two to four feet had painted jaws of the dugong and large conch shells (*Fusus proboscidiferus*) fixed to the top, and numerous other dugong bones and shells were scattered along the front. On the ground along the foot of the screen was a row of stones painted with black and red in imitation of grotesque faces, and to several of these the old man who acted as cicerone attached the names of persons who were dead. In some the painting was comparatively recent, and the stones

appeared to have been placed there singly at different periods to commemorate the death of the heads of families of the tribe. We saw another of these curious funeral screens,—like the first one it was situated in a little glade in the forest, but unlike it the front was covered or thatched with cocoa-nut leaves, and it had a small door-like opening in the centre.

The natives must have left the island either on account of its being now the turtling season, or else from the want of water. A small deep well behind the village, apparently the only one in the place, was almost entirely dried up. From the old man I procured the names of some of the neighbouring islands, and also a few other Kúlkalega words which are so similar to those of the Kowrarega language as to corroborate Gi'om's assertion that both have many words in common. By way of illustration I may give a few examples. Thus *muto*, small bird; *kúdulug*, dove; *geinow*, pigeon; *kakúr*, egg; *burda*, grass; *warába*, cocoa-nut; *moda*, enclosure round the huts.

At one place I saw indications of an upheaval of the northern side of the island in a bed of coral conglomerate six feet thick, with its raised wall-like edge towards the hill as if tilted up, and the remainder sloping down towards the sea. A similar appearance on a small scale exists on most of the coral islands which I have visited, but I had not before seen these sloping beds above the influence of the salt water, or at least beyond reach of the spray, still less supporting luxuriant vegetation, consisting

in the present instance of a large extent of jungle, with trees often of great size, and a dense growth of underwood.

Among the natural productions of the island I may first allude to the large thickets of bamboo scattered along the base of the hill as the first new feature in the vegetation, and secondly, to the small *Eucalypti* growing between the hill and the brushes, as this is the most northerly limit of that Australian genus known to me. Among the trees of the brushes I may mention the *Anacardium*, or cashew nut, with large red acrid fruit, *Mimusops Kaukii*, often attaining a great size, and a species of *Bombax*, or silk-cotton tree, from the trunk of one of which the canoe we saw upon the beach was being constructed.

Of birds the Australian quail, Torres Strait pigeon, and brown dove were plentiful, and afforded good sport to the shooters; *Pitta strepitans* (a handsome thrush-like bird of gaudy colours—red, green, blue and black) was heard calling in every brush and thicket. Several large lizards were seen; one of these, about four feet in length, perched upon the fence of one of the deserted huts, at first took so little notice of my approach that I refrained from shooting it, thinking it had been tamed. The colour of this lizard (*Monitor Gouldii*) is a dull bluish green, spotted and variegated with yellow. It is much esteemed as food, and the skin is used for covering the *warúp* or New Guinea drum.

Dec. 7th.—In the morning a canoe, with seven

men in it, came off to the ship from Sue Island, near which we were at anchor. At first they approached cautiously, holding up pieces of tortoise-shell, and making a great noise, shouting out, "*kaisu* (tortoise-shell), *kapo-búc—kapo-búai—poud—poud*," &c., besides other words which were unintelligible, pointing at the same time to the island (which they called *Wārăber*) as if inviting us to land. These blacks belonged to the Kulkalega or Kulkalaig tribe, as was ascertained by Gi'om, who was well known to some of them, and understood enough of their language to keep up a conversation. Nearly the whole tribe, she was informed, are now upon Sue Island, although their head-quarters are, as mentioned before, at Mount Ernest. The men in the canoe differed in no material respect from the natives of the Prince of Wales Islands on one hand, and those of Darnley Island on the other. Many had the characteristic faint oval scar on one shoulder, some wore the hair in moderately long pipe-like ringlets, while others had it cut close. All were perfectly naked, and the only ornaments worn were the large round pearl-shell on the breast. The canoe was rather singular in form, with greater beam than I had ever seen in one, nor did the sides tumble home as usual; the bow was sharp, but the stern square, as if effected by cutting a very large canoe in halves, and filling up the open end. We saw several bamboo bows and bundles of arrows, stowed away under the platform; these the natives would

not part with, but a large quantity of very fine tortoise-shell was obtained, chiefly in exchange for leaf tobacco, which they know by the name of *súgúb*.

When the tide slackened we got under weigh, and the natives returned to their island. Sue, although the largest of the Three Sisters, is not more than the third of a mile in length. Like all the islands of the eastern side of Torres Strait, with the exception of the Darnley and Murray Islands, this is of the coral sand formation, low and thickly wooded. Some cocoa-nut trees grow at the west end of the island, where there is a native village which we approached close enough to have a good view of it with the spy-glass. It consisted of several long huts, thatched with grass, which apparently are not much used during the day time, as we saw no one entering or coming out of them. Many of the people, both men and women, ran down to the beach, waving green branches to induce us to land; others were sitting down under temporary sheds made by stretching large mats—the sails of their canoes—over a frame-work of sticks. The inside of one large enclosure was concealed by a fence six feet high, and an adjacent shed, under which some cooking was going on, was completely covered with some recent shells of turtle, apparently about thirty in number. Three very large canoes were hauled up on the beach, protected from the sun by matting, and two smaller ones were kept afloat. There appeared to be about 60 people upon the island, from which, and other

circumstances, I do not suppose the Kulkalega tribe to consist of more than 100 souls. The women whom we saw wore loose petticoats of leaves reaching to below the knees.

The ship worked up through the channel between Bet and Sue Islands, and anchored for the night off the eastern extreme of the reef running out from the former. Four large canoes coming from the northward passed over the reef at high water, going towards Sue Island.

Next day we passed Cocoa-nut Island on our right, and Dove Island on our left, and anchored near Arden Island, where we landed on the following morning before daylight with a seining party. The place is scarcely more than a quarter of a mile in length, low and sandy, covered with tall bushes and a few clumps of trees (*Pisonia grandis*). We saw traces—but none very recent—of visits paid by the natives, indicated by remains of fires, turtle bones, a large pit dug as a well, and two old graves. As usual a coral reef extends from the shore, without leaving a clear spot of sufficient size to admit of the seine being hauled. Species of *Cissus* and two or three *Capparidæ* constituted the bulk of the vegetation, and rendered the low scrub almost impervious in many places. A number of Torres Strait pigeons, chiefly young birds, and some stone-plovers and other waders, were shot, and one rare bird was obtained for the collection, a male of *Pachycephala melanura*. Soon after our return we got under

weigh, passed on our right Rennel, Marsden and Keat Islands, and anchored three miles to the northward of the last of these.

Dec. 10*th.*—While getting under weigh, a canoe with a party of natives from Stephens Island came off to us in a very confident manner, and at once called out for a rope (*laga*), with which they made fast to the ship. Among them were two of the natives of Darnley Island, one of whom, Dzúm, soon recognised me as an old acquaintance, under the name of Dzóka, by which I had formerly been known on shore during the Fly's visits. They had a few cocoa-nuts, and a little tortoise-shell for barter, and were very urgent that the ship should go to Campbell Island on her way to Darnley, promising us abundance of water, cocoa-nuts, yams, and tortoise-shell, of the first of which at least they could have had none to spare. In the evening they left us, after spending the greater part of the day on board, with their canoe towing astern. I found the native names of at least three of the islands to differ from those given in the Admiralty's chart of Torres Strait from the Fly's survey. Thus Nepean Island is Edŭgōr, not Oogar,—Stephens Island is Ugar and not Attagor,—and Campbell Island is Zapker (nearly as Lewis makes it) and not Jarmuth. These names were obtained under circumstances which obviated the possibility of mistake. Dzúm also gave much information regarding other matters, and enabled me to fix the limits of

the tribe to which he belonged, a matter which had frequently puzzled me before. In the afternoon the Bramble—as told us by the natives—appeared in sight, but we could not reach Darnley Island, so anchored after dark in forty-five fathoms, mud, seven miles to the northward of it.

Dec. 11*th.*—A light air from the N.W. carried us up to the anchorage in Treacherous Bay about noon. A canoe from the village of Kiriam came off to us, and lay under our stern bartering tortoise-shell for knives, axes, and tobacco, and when we shoved off in the first cutter to communicate with the shore, one of the natives, on being asked to accompany us, jumped into the water without a moment's hesitation, and swam to the boat. We landed at Kiriam, and were received by a crowd of people on the rocks and in the water. My old friend Siwai, with whom I had gone through the ceremony of exchanging names nearly five years ago, shewed much joy at seeing me again, and made many inquiries regarding Jukes and others then in the Fly. But these five years have sadly altered him,—he now presents the appearance of a feeble emaciated man prematurely old, with a short cough and low voice,—his back is bowed down, and even with the aid of a stick he can scarcely totter along. He is now the man in most authority in the island, his rival Mamús having been killed in New Guinea in company with several other Darnley Islanders whose names were mentioned to me; they

had been on a visit to a friendly tribe, one of whose quarrels they espoused, and only a few returned to Errúb to tell the tale. The natives wished us to stay at Kiriam, but as the principal object of the ship's coming to the island was to procure water, we were anxious to know whether it could be obtained in sufficient quantity at Bikar, where the Fly and Bramble had watered before. As Siwai told us that there was none at Bikar, but plenty at Mogor—his own village—we pulled along to the latter place, accompanied by himself and three of his sons. In passing along the south-west side of the island, we were struck with the superior richness of vegetation and apparent fertility, compared with what we had seen in New Guinea and the Louisiade Archipelago during the previous part of the cruise. Some portions reminded one of English park scenery, —gently sloping, undulating, grassy hills, with scattered clumps and lines of trees.

On landing at the village, which consists of two or three houses only, we were taken a quarter of a mile—by a path leading along a small valley through a grove of cocoa-nut trees, bananas, and various cultivated plants, (among which I observed the Mango in full bearing)—to a pool of water in the dried-up bed of a small rivulet. But the quantity of water was not enough for our purpose, even had it been situated in a place more easy of access. Some magnificent Sago palms overhung the water with their large spreading fronds; these we were told

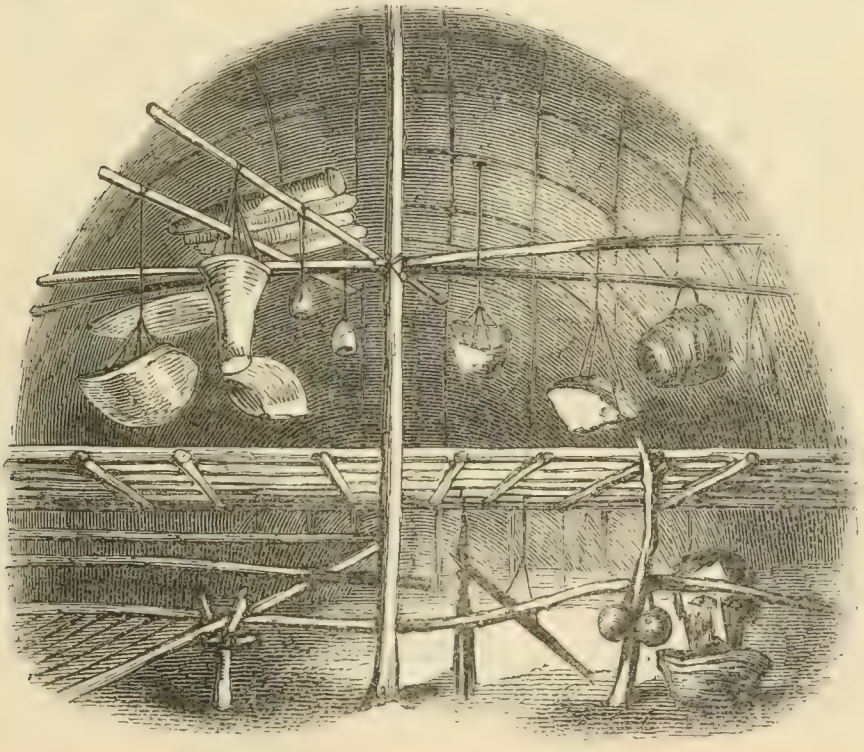
had been brought from Dowde or New Guinea, many years ago. Siwai and his sons, at their own urgent request, were allowed a passage with us to the ship, and remained all night there, sleeping among the folds of a sail upon the poop.

Dec. 12*th.*—In the morning a party landed at Bikar (abreast of the ship) to look for water, but the pool which on several occasions supplied the Fly, Bramble, and Prince George, was now dry. At this season too, during the prevalence of N.W. winds, landing is difficult on account of the surf, and we had much trouble in keeping our guns dry while up to the waist in water. In the afternoon both cutters were sent to Mogor to procure vegetables for the ship's company by barter with the natives, and I accompanied the party, but, contrary to expectation, no one was allowed to land, the person in authority "having seen something" on shore to alarm him, the nature of which continued to us a mystery. The second cutter laid off, and the first remained in water about knee-deep, surrounded by a crowd of unarmed natives. The scene was at that time very animated—groups of men, women, and children, were to be seen staggering under a load of cocoa-nuts, wading out to the boats, scrambling to be first served, and shouting out to attract attention to their wares, which in addition included some tortoise-shell, a few yams, bananas and mangos. Siwai was present in the boat, and by exercising his authority in our behalf, matters

went on more smoothly than otherwise might have been the case. A large supply of cocoa-nuts and a few vegetables having been obtained for axes, knives, calico, and red cloth, we returned to the ship.

Dec. 13*th.*—Three boats were sent to Kiriam to procure more cocoa-nuts. There being no prohibition of landing, I remained on shore during the bartering, sitting in a shady place among a group of women and children, and employed in procuring materials for a vocabulary. Most of them remembered me of old, and in consequence fancied they had a claim upon my tobacco, the stock of which was quickly exhausted.

The huts of Darnley Island—together with the inhabitants—have been so fully described in the voyage of the Fly, that it is unnecessary for me to



enter upon the subject. The natives always objected to shew to us the inside of their huts, many of which we knew were used as dead houses—but Mr. Huxley to-day was fortunate enough to induce one of them to allow him to enter his house, and make a sketch of the interior, but not until he had given him an axe as an admission fee. These huts resemble a great bee-hive in shape—a central pole projects beyond the roof, and to this is connected a frame work of bamboo, thatched with grass, leaving a single small low entrance to serve as door and window.

Several human skulls were brought down for sale, also a little shrivelled mummy of a child. Some of the former had the skin quite perfect, the nose artificially restored in clay mixed with a resinous substance, and the orbits occupied by a diamond-shaped piece of mother-of-pearl, with a black central mark. Towards the end of the bartering the natives had become very noisy, and even insolent, and everything seemed to indicate that some at least of them were dissatisfied, and inclined to resent some injury or cause of offence, for which purpose apparently they had their bows and arrows ready, and their gauntlets upon the left fore arm. Some of them desired me to get into the boat and be off, intended as I understood for a friendly caution, while Dzúm came up with an air of profound mystery, wishing me to come with him (now that I was alone) to a neighbouring hut to see a *barit* which he had brought over for me from Stephens

Island. This name is applied to the opossums of the genus *Cuscus* which the Torres Strait Islanders occasionally procure from New Guinea. However it was time for me to be off, so I contented myself with promising a large reward for the animal if taken off to the ship. The produce of our barter on this and previous occasions amounted to 467 cocoa-nuts, 388 pounds of yams* (then very scarce), and 159 pounds of bananas.

While at dinner news was brought that Dzúm was under the stern in a canoe, shouting out loudly for Dzóka, and, on going up I found that he had brought off the *barit*, which, after a great deal of trouble, I struck a bargain for, and obtained. It was a very fine specimen of *Cuscus maculatus*, quite tame, and kept in a large cage of split bamboo. Dzúm seemed very unwilling to part with the animal, and repeatedly enjoined me to take great care of it and feed it well, which to please him I promised to do, although I valued it merely for its skin, and was resolved to kill it for that purpose at my first convenience. He had also brought a basketful of yams of an inferior quality, as sea stock for the *barit* during the voyage, and promised more on the following morning.

Dec. 16*th.*—Two days ago we left Darnley Island for Bramble Cay, distant about thirty miles

* Not less than nine different kinds of yams and yam-like tubers—including the sweet potato—are cultivated in Torres Strait, and are specially distinguished by name.

N.E., but owing to calms and light winds had to anchor twice. A strong N.W. breeze which came on last night, and caused us to drag the stream anchor, at length brought us up to our destination, near which we anchored in 25 fathoms, sand, the island bearing N.W. $\frac{1}{2}$ W. distant a mile and a quarter. In the afternoon I landed for an hour, passing many turtle on the water both going and returning. As usual the islet was covered with sea birds, only two species, however, of which were breeding. The Brown Booby (*Sula fusca*) and a large tern (*Thalasseus Pelecanoides*) existed in about equal numbers; the latter, in one great colony, had laid their solitary large speckled eggs in a slight excavation in the sand, the former were scattered all over the island, and had regular nests of weed, containing either two eggs, or a single young bird covered with white down. Well does the booby deserve its name. The grotesque and stupid look of the old bird standing by its eggs or young—irresolute whether to defend them or not, and staring with an intensely droll expression at the intruders—is very amusing; at length on being too closely approached, it generally disgorges the contents of its stomach—consisting at this time of very fine flying fish—and after some half shuffling, half flying movements, manages to get on wing and be off. As the tern's eggs were within a short time of being hatched we broke all we saw in order to ensure some newly laid ones in a day or two.

We remained at this anchorage for the two following days, during which time the weather was generally gloomy and unsettled, with occasional heavy rain. As numerous recent tracks of turtle upon the sandy beach indicated that the season had not yet ended, parties were sent on shore to watch for them after dark, and although only one was taken on the first night, yet on the following not less than eighteen were secured and brought off: fifteen of them were of the green, and three of the hawksbill kind. The last, I believe, is undescribed: it is certainly not the one (*Caretta imbricata*) producing the greater part of the tortoise-shell of commerce, and which is not rare in Torres Strait, distinguished by having the posterior angle of each dorsal plate projecting, so as to give a serrated appearance to the margin of the carapace which, in the present species is quite smooth. The green turtle averaged 350 lbs. each, and the hawksbills about 250 lbs. Although a strong prejudice existed against the hawksbill as an article of food, we all found reason to change our minds, and pronounce it to be at least equal to the other. The newly hatched turtle (all hawksbills) were running about in every direction, and among their numerous enemies, I was surprised to see a burrowing crab (*Ocypoda cursor*) which runs with great swiftness along the sandy beaches. These crabs even carried off a plover which I had shot, not allowing more than ten minutes to elapse

before one of them had it safely (as it thought) stowed away in its burrow.

The golden plover was plentiful on the island during our visit, and one afternoon I killed fifteen in about an hour. Two days after the tern's eggs had been broken we found a small colony of laying birds, and picked up some dozens of eggs; and had we remained a few days longer, doubtless a very great number might have been procured. The weed which in the Fly we used to call spinach (a species of *Boërhaävia*, apparently *B. diffusa*,) being abundant here, was at my suggestion collected in large quantity for the use of the ship's company as a vegetable, but it did not seem to be generally liked.

Dec. 21*st.*—Two days ago we left Bramble Cay for Cape Possession in New Guinea, with a fine breeze from the N.W., and next morning at daylight saw the land about the Cape on the weather-beam. The wind, however, died away in the afternoon, but this morning a light north-westerly breeze sprang up, before which we bore up and were brought in the afternoon to an anchorage in 11 fathoms, mud, half a mile to leeward of the Pariwara Islands. Meanwhile Lieut. Yule, upon our destination being changed, was ordered by signal to proceed to Cape Direction and survey the intermediate space between that and Redscar Bay, in order to connect his former continuation of the

Fly's work with ours, and thus complete the coast line of the whole of the south-east part of New Guinea.

We remained at this anchorage for upwards of a week, during which a rate for the chronometers was obtained, and the Bramble returned. The weather during our stay was very variable and unsettled; rain fell on several occasions. The wind was usually from the westward, varying between N.W. and S.W., and on one occasion during the night we had a sudden and very violent squall from the westward, which for a time was thought to be the beginning of a hurricane, but the gale moderated very gradually next day. When the wind during the day was light and from seaward, a land breeze generally came off at night, occasionally with rain. The cause of this last seems to be the influence exerted upon the winds here by Mount Owen Stanley and the ranges connected with it, from which the clouds accumulated during the prevalence of the sea breeze, are reflected after its subsidence. The low and well wooded district between the mountains and the sea receives the passing influence of these clouds surcharged with moisture, and the climate there and in all the low maritime districts of the south-east part of New Guinea backed by high land, is probably always a moist one, little affected by the prevalence of either the N.W. or S.E. monsoon. The observations made during our last visit to determine the height of Mount Owen

Stanley, and not considered very satisfactory, were repeated under more favourable conditions, but with nearly the same result. This mountain, the highest of the range of the same name, is somewhat flat-topped (as viewed from our anchorage), about six miles in length, and the mean of five observations from different stations, gave 13,205 feet as the height of the highest part above the level of the sea.

On the largest Pariwara Island, although abundance of rain had fallen lately, there was no water left in any pool or hole in the rock. Nor although the soil, from the additional moisture, looked darker and richer than during my former visit in September, was there any perceptible improvement in the vegetation. A few fork-tailed red-fronted swallows (*Hirundo neoxena*) were hawking about, and a large yellow and black butterfly (*Papilio Epius*, common in collections from India and China) was abundant. Many Torres Strait pigeons were observed from the ship to resort nightly to the second largest of the group, which is covered with trees and seems quite inaccessible from the steepness of its low cliffs. On several successive evenings about sunset, and until it became too dark to distinguish them, immense numbers of frigate birds were observed flying over Redscar Head, and going out to the N.N.E. This being a gregarious bird only when associated at a breeding place, and there being no known sand-bank or islet in the

direction which they were pursuing, rendered their object a subject for much conjecture.

We were occasionally visited by parties of natives, chiefly coming from the northward, probably from some of the large river mouths known to exist there. Although in bringing their women and children off to see the ship they indicated little suspicion or fear, yet on one occasion only could we induce any of the men to come on board, and the two who did so would not be persuaded to go below, and made their stay very short. As I had better opportunities of making observations upon these natives than during our former visit, some additional information regarding them may be given here. The inhabitants of Redscar Bay, judging from what was seen alongside the ship, are rather smaller in stature than those seen at Dufaure and Brumer Islands and the Louisiade, but perhaps more frequently shew handsome features and good expression. Neither were there any men exceeding the rest in height by even three inches, as had often been the case in other places. They are usually of a very light copper colour, but one man was of a very pale yellow and much resembled a Chinaman in hue; although it may at first appear strange, yet this pale-skinned individual by his very colour excited feelings of disgust in the minds of some of us, such as would be created by the sight of a person whose body was covered with a loathsome eruption and who still publicly exposed it. And why should

not our pale faces be regarded by these savages in a similar light? Some had perfect Malayan features, but none seen on this occasion appeared to practise betel-chewing,—a remarkable circumstance, since the men who on our former visit came off to the ship, then only about fifteen miles to the north-west, had their teeth discoloured.

None of the natives had any hair upon the face; various ways of dressing that of the head were practised, the most singular of which has already been described at p. 297 of Vol. I. The hair was usually of its natural dark colour at the base, with the remainder dyed reddish brown and frizzled out into a mop with long-toothed combs of wood or tortoise-shell. One child had the head so shaved as to leave a long tuft on the forehead, and another on the back of the head—precisely in the same manner as is sometimes practised in Java. Nor must I omit noticing a singular appendage formerly alluded to—analogous to the pigtail once in vogue—worn by many of these people; it is formed of human hair wrapped round with twine, and ends in one or more bunches of shells, dog's teeth, and tails of pigs,—the longest one which I saw measured twenty-one inches in length. Among numerous ornaments the most common is a large round concave portion of melon shell, sometimes beautifully inlaid with filagree work of tortoise-shell, worn on the breast. Fillets of cassowary feathers, fur of the spotted bare-tailed opossum, or woven stuff studded with shells, were often seen.

Painting the face or body does not seem to be practised here, but the men are usually tatooed on the breast, cheeks, forehead, and arms, also occasionally on other places. Their tatooing, however, is much fainter and less profuse than among the women, every visible part of whose skin is generally marked with a great variety of patterns, the most usual style among them consisting in series of double parallel or converging lines an inch or more apart, the intervals being occupied by small figures, or irregular lines, with detached rectilinear figures fancifully filled up. The women wear a petticoat of shreds of pandanus leaf, plaited above into a waistband and below reaching nearly to the knee.

They brought off little with them for barter besides bows and arrows, and as before appeared perfectly ignorant of the use of iron. A few cocoanuts, plantains, and mangos were obtained from them, but they had no yams. Nearly every canoe which came alongside contained several large baked earthen pots of good construction, some with wide, others with narrow mouths, and a third sort shaped like a saucer. Besides bows and arrows, we saw many spears, mostly of small size and usually finely jagged or barbed towards the end, but of very inferior workmanship, also some shields, one of which may be described.* It measures 33 inches in length by 14 in width, and in shape resembles a fiddle, being rounded at the ends and slightly

* Figured at p. 279, vol. i.

contracted in the middle; it is made of wood, three-fourths of an inch thick, neatly covered with fine cane matting, fitting very tightly.

The canoes seen here are either single or double, in the latter case consisting merely of two lashed together, usually without an outrigger. The single canoes vary in length from 20 to 30 feet, and carry from five to a dozen people. Each end tapers to a sharp projecting point longer at the bow. The outrigger frame consists of five poles laid across the gunwale in grooves, and the float, which is rather less than half the length of the body of the canoe, is secured to the ends of each by three pegs, a foot in length. The opposite ends of the outrigger poles project beyond the side only a few inches, and are secured by lashing of cane to a piece crossing them; the gunwale is further strengthened by slender poles running along it from end to end. A small portion only of the outrigger frame is converted into a platform by a few loose poles or a plank or two: some of the latter were as much as two feet in width, and only an inch in thickness, and must have been cut with stone axes out of a log of wood. The largest canoe seen was judged to be thirty-five feet in length, with a width at the bow of four and a half feet, but this far exceeded in bulk any of the other single ones. Like the rest it essentially consisted of the hollowed out trunk of a tree. All the heavy canoes are pulled with oars, working in cane gromets, the others are propelled with paddles.

Both oars and paddles have lanceolate blades and thick handles, without any attempt at ornament or even neatness of design.

The sail (of pandanus matting) is a long parallelogram, twelve feet by three, its sides secured by two tough slender poles, between which it is stretched, and which serve both as masts and yards. In making sail one of the poles is shipped, two stays from the centre leading fore and aft are then set up, after which the second pole is fixed and secured by stays, so as to give the sail the requisite inclination. We frequently saw a second smaller sail set before the first, at the distance of eight or ten feet, and managed precisely in the same way, but, even with both sails set, owing to the disproportion between the "spread of canvas," and the bulk of the canoe, the latter moves slowly at all times, and on a wind makes much leeway.

Dec. 31*st.*—We sailed yesterday from our anchorage in Redscar Bay, but did not clear the sunken ridge of coral in the offing—a submarine extension of the Barrier Reef, stretching between Low Island and the vicinity of South-west Cape—until this forenoon, when we got out of soundings. The Bramble is to remain behind for three or four weeks upon the coast, to fill up various blanks in the chart between this and Rossel Island, while we are to make the best of our way to the Duchâteau Islands, to obtain a meridian distance, and thence proceed direct to Sydney.

Jan. 6th, 1850.—Our passage to the Duchâteau Isles, a distance of less than 400 miles, has been protracted by the prevalence of light winds, although these were generally favourable, or from the westward. Occasional calms, squalls, and rain occurred, but the weather generally was finer than during the S. E. monsoon. As an instance of the clearness of the atmosphere, so different from what we had usually experienced during our former visit to these shores, it may be mentioned, that on one occasion during a light breeze from the northwest we clearly saw Mount Yule (10,046 feet high) and the summit of Mount Owen Stanley, distant respectively, one hundred and twenty, and eighty miles from the ship. On this occasion also we had a full view of the whole of Mount Astrolabe, which although 3824 feet in greatest height, and appearing to D'Urville as he ran past to be the highest land on this portion of the coast, is rendered quite insignificant by the lofty though distant range behind. Mount Astrolabe differs in character from any other of the New Guinea mountains seen by us, indicating a different geological formation. The summit extends thirteen miles, running parallel with the coast line and distant from it about eight miles. Viewed from the south-westward the outline is regular, exhibiting a series of nearly flat tops with slight interruptions, but from the southward it appears as a succession of terraces or projecting cliffs, precipitous in front near the summit, with a long steep slope

below, probably of debris, while the flat top slopes backwards with a very gentle declivity. Owen Stanley Range again presented quite a different aspect as seen on the occasion alluded to, when nearly one half of its whole length (300 miles) from Mount Yule to Heath Bay was in full view: the outline was irregular but never suddenly so, and no peaks or other remarkable points were seen.

I may mention here in relation to this part of New Guinea, though not in continuance of the narrative, that the Barrier Reef, beginning (or ending), at Low Island, is continued to the southward and eastward for 150 miles, as far as Cape Colombier, generally following the tread of the coast, at a distance off it of from three to fifteen miles. A long strip of apparently navigable water is thus enclosed between the reef and the shore, with numerous passages, many of which appeared to be clear to Lieut. Yule as he passed along close to the outer margin of the reef. Some good harbours doubtless exist here; the Bramble passed through Roundhead Entrance and found good anchorage in fifteen fathoms immediately inside. The whole of this extent of coast appeared to be well peopled. On the western side of Mount Astrolabe, for instance, numerous villages and patches of cultivated land were seen from the Bramble.

Both in Redscar Bay and for the first two or three days after leaving it numbers of sago palms, some quite recent, were observed on the water, occa-

sionally with boobies and noddies perched upon them. These trees had probably grown upon the banks of the rivers of the bay, and been washed away by the undermining of the low alluvial banks on which they grow, and carried out to sea by the current. Along several of the fresh-water channels on the western side of the Great Bight examined by the Fly's boats in 1844, I had seen this palm growing on the margin of the stream in great profusion, and according to Gi'om, the *bisi* tree (as she called it), is occasionally carried by the winds and currents as far south as the Prince of Wales Islands, when the natives scoop out the soft spongy inner wood, wash it well with fresh water, beat it up into a pulp, separate the farinaceous substance which falls to the bottom of the vessel, and bake it as bread. On no part of the coast of New Guinea, however, did we ever see any of this sago bread, which is known to constitute the principal food of the inhabitants of the north-west coast of that great island.*

On one occasion lately the water was discoloured by a conferva resembling the "sea sawdust" of Captain Cook, with which it was found to agree generically in consisting of long filaments joined together by a softer gelatinous looking substance.

* Forrest endeavours to shew that an acre of ground planted with 300 sago palms will maintain fourteen men, as each tree produces 309 pounds of sago flour, when arrived at full maturity in its seventh year. Voyage to New Guinea and the Moluccas in 1774-6; by Captain Thomas Forrest, 2nd. Ed. p. 44.

The present species, however, is six times larger than the more common sort, some of which was mixed up with it, their diameters, as ascertained by Mr. Huxley, being respectively $\frac{8\frac{1}{2}}{5000}$ and $\frac{1\frac{1}{8}}{5000}$ of an inch.

To-day we stood in for the Duchâteau Isles, and, rounding them to the westward, anchored in the afternoon in seventeen fathoms, with the central island bearing south, distant one mile.

Jan. 7th.—Along with a shooting party I landed soon after daylight on the westernmost Duchâteau Island. Numbers of Nicobar pigeons left the island as we approached, having apparently used it merely as a roosting place. Heavy showers and thunder clouds passed over at intervals during the whole morning, rendering our shooting not quite so successful as it might have been; still we procured about fifty pigeons and a few of Duperrey's megapodius. In habits this last bird resembles the Australian species, especially in constructing enormous mounds for the reception of its eggs. Those which I saw averaged five feet in height and fifteen in diameter, and were composed of the sandy soil of the neighbourhood, mixed up with rotten sticks and leaves, but without any shells or coral. Some were placed on the outer margin of the thickets close to the beach, and others were scattered about more inland. As several of these mounds shewed indications of having lately been opened by the birds, I entertained hopes of being able to procure an egg,

but after digging several pits three feet in depth, with no more efficient implements than my hands, I had to give up the work from sheer exhaustion. This bird is apparently very pugnacious at times, as I frequently saw them chasing each other along the ground, running with great swiftness, and uttering their cry more loudly than usual, stopping short suddenly and again starting off in pursuit. The cry consists of one or two shrill notes, uttered at intervals and ending in a hurried tremulous cry repeated five or six times. The noise made by this megapodius while scratching among the dead leaves for food may sometimes be imitated with such success as to bring the bird running up within gunshot. When suddenly forced to rise from the ground it flies up into a tree, and remains there motionless, but exceedingly vigilant, ready to start on the approach of any one, but on other occasions it trusts to its legs to escape. Its food is entirely procured on the ground, and consists of insects and their larvæ (especially the pupæ of ants), small snails, and various fallen seeds and fruits. Although a great number of the Nicobar pigeons had left, many yet remained, and the whole island resounded with their cry mixed up with the cooing of the Nutmeg pigeon. Little skill is required in shooting these birds, for they generally admit of very close approach, as if trusting to the chance of being overlooked among the dense foliage.

Jan. 8th.—During the night a party of natives

in five canoes came over from the Calvados Group, and first attracted our attention by making several fires on the middle and easternmost islands. Soon after daybreak they came alongside in their usual boisterous manner. A few words of their language which were procured proved to be of great interest by agreeing generally with those formerly obtained at Brierly Island, while the numerals were quite different and corresponded somewhat with those of my Brumer Island vocabulary. Two of the canoes—one of which carried sixteen people—were large and heavy and came off under sail, tacking outside of us and fetching under the ship's stern. In these large canoes the paddles are of proportionate size and very clumsy,—they are worked as oars with the aid of cane gromets,—the sail is of the large oblong shape formerly described. One of the canoes was furnished with a small stage above the platform for the reception of a large bundle of coarse mats, six feet long and two-and-a-half broad, made by interlacing the leaflets of the cocoa-palm; these mats are probably used in the construction of temporary huts when upon a cruise.

Although rather a better sample of the Papuan race than that which we had lately seen at Redscar Bay, there was no marked physical distinction between these inhabitants of the Louisiade and the New Guinea men. The canoes, however, are as different as the language; here, as throughout the Archipelago, the canoes have the semblance of a narrow

coffin-like box, resting upon a hollowed out log, the bow having the two characteristic ornaments of the *tabúra*, or head-board, and the crest-like carved wood work running out along the beak. Some of the natives were recognised as former visitors to the ship. Nearly all were painted, chiefly on the face, the favourite pattern being series of white bars and spots on a black ground. Except their ornaments and weapons, they had little to give us for the iron hoop so much in request with them; only a few cocoa-nuts, and scarcely any yams were obtained, and to the latter they attached a much higher value than formerly.

At length the natives left us, three canoes making to the northward, and two returning to the Duchâteau Isles. Morning observations for rating the chronometers having been obtained, we got under weigh soon afterwards, and, bidding farewell to the Louisiade Archipelago, commenced our voyage to Sydney.

Our daily average progress during the passage to Sydney (which occupied a period of twenty-eight days), was less than fifty miles. The winds for the first few days, or until beyond the influence of the land, were light and variable, shifting between S.W. and N.E. by the northward, and accompanied by occasional squalls and rain. It became a matter of difficulty to determine when we got into the south-east trade; it was not until we had reached latitude 20° S. that the wind—light on the preceding day,

but on this strong, with squalls and rain,—appeared steady between E.S.E. and S.S.E. and this carried us down to Sandy Cape. In traversing the Coral Sea, the numerous detached reefs were so carefully avoided that we saw none of them,—thus in one sense it is to be regretted that the passage through them of a surveying vessel, with seventeen chronometers on board, was productive of no beneficial result by determining the exact position of any one of these dangerous reefs, most of which are only approximately laid down upon the charts.*

The most important practical result of Capt. Stanley's survey of the Louisiade Archipelago and the south coast of New Guinea, was the ascertaining the existence of a clear channel of at least 30 miles in width along the southern shores of these islands, stretching east and west between Cape Deliverance and the north-east entrance to Torres Strait—a distance of about 600 miles. This space was so traversed by the two vessels of the expedition without any detached reefs being discovered, that it does not seem probable that any such exist there, with the exception of the Eastern Fields of Flinders, the

* About this time a new reef was discovered during the passage from Cape Deliverance to Sydney of H.M.S. Mœander, Capt. the Hon. H. Keppel. While this sheet was passing through the press, I saw an announcement of the total wreck upon Kenn Reef—one of those the position of which is uncertain—of a large merchant ship, the passengers and crew of which, 33 in number, fortunately however, succeeded in reaching Moreton Bay in their boat—a distance of 400 miles.

position and extent of which may be regarded as determined with sufficient accuracy for the purposes of navigation, and the reefs alluded to at p. 288 of Vol. I., which, if they exist at all, and are not merely the Eastern Fields laid down far to the eastward of their true position, must be sought for further to the southward. The shores in question may now be approached with safety, and vessels may run along them either by day or night under the guidance of the chart—without incurring the risk of coming upon unknown reefs, such as doubtless exist in other parts of the Coral Sea further to the southward—judging from the occasional discovery of a new one by some vessel which had got out of the beaten track. Whalers will no doubt find it worth their while—with the characteristic enterprise of their class—to push into those parts of the Coral Sea now first thrown open to them, and, although we have not as yet sufficient grounds to warrant the probability of success in the fishery, yet I may mention that whales were seen on several occasions from both of our vessels.

This naturally originates the question—to what extent do the Louisiade Archipelago and the south-east coast of New Guinea afford a field for commercial enterprise? What description of trade can be established there by bartering European goods for the productions of these countries? Unfortunately at present most of the evidence on this point is of a negative kind. Besides articles of food, such as

pigs, yams, and cocoa-nuts, and weapons and ornaments of no marketable value,—tortoise shell, flax, arrow root, massoy bark, and feathers of the birds of paradise were seen by us, it is true, but in such small quantities as to hold out at present no inducement for traders to resort to these coasts for the purpose of procuring them. That gold exists in the western and northern portions of New Guinea has long been known, that it exists also on the south-eastern shores of that great island is equally true, as a specimen of pottery procured at Redscar Bay contained a few small laminar grains of this precious metal. The clay in which the gold is imbedded was probably part of the great alluvial deposit on the banks of the rivers, the mouths of which we saw in that neighbourhood, doubtless originating in the high mountains behind, part of the Owen Stanley Range.

It is evident, however, that our acquaintance with the productions of a great extent of coast line upon which we never once landed must be very slight, but with that little we must be content until some more complete exploration of the shores, which were only cursorily examined, and especially of the rivers of the Great Bight—which seem to offer a ready means of penetrating far into the interior of New Guinea—shall have been effected. That an expedition with this end in view will soon be undertaken is, however, highly improbable, the survey of the Rattlesnake having completed all that was requisite

for the immediate purposes of navigation in those parts.

The fact of the existence of several active volcanoes on islands immediately adjacent to the north coast of New Guinea (first made known by Dampier), and the circumstance of volcanic bands traversing the length of many of the great islands of the Malayan Archipelago, and others as far to the southward as New Caledonia and New Zealand, rendered it extremely probable that we should have found indisputable signs of comparatively recent volcanic action in the south-east part of New Guinea. We saw no volcanoes, however, and the great central mountain chain appeared to me to be probably granitic. The large Brumer Island is composed of igneous rocks as formerly mentioned; and at Dufaure Island I obtained from some canoes which came off to us a few smooth water-worn pieces of hornblendic porphyry. Some specimens of obsidian, or volcanic glass, were also procured from the natives at the latter place, where sharp-edged fragments are used for shaving with; one variety is black, another of a light reddish-brown, with dark streaks. Mount Astrolabe is apparently of trap formation, as I have already stated. Some conical hills scattered along the coast may possibly be of volcanic origin, especially one of that form rising to the height of 645 feet from the low land behind Redscar Head. It is in this neighbourhood also that we find the upraised calcareous rocks of modern date exhibited by the

Pariwara Islands and the neighbouring headland, with which they were probably once continuous; near this, too, the barrier reef of the coast ceases at Low Island, which it encloses, although its line is continued under water, as a ridge of coral, as far as the South-west Cape, where the coral ends, unless the shoals apparently blocking up the channel south of Yule Island are of the same formation.

Reference to the outline chart will enable the reader to follow me in some general remarks which did not properly enter into the narrative. The Louisiade Archipelago, reduced to what I conceive to be its natural limits, includes that extensive group of islands comprised between the parallels of 10° 40′ and 11° 40′ S. latitude, and the meridians of 151° and 154° 30′ E. longitude. About eighty are already known, and probably many others remain yet to be discovered in the north-west, a large space there being as yet a blank upon the chart. All the islands of the group, with the exception of the low ones of coral formation to the westward, appear to be inhabited, but probably nowhere very densely, judging from the comparatively small number of natives which we saw, and the circumstance of the patches of cultivation being small and scattered, while the greater part of the large islands is either covered with dense forest, or exhibits extensive grassy tracts with lines and clumps of trees. Such of the islands as were examined consisted of mica slate, the line of direction of the beds of which is nearly the same as

that of the Archipelago itself, and the physical appearance of the other islands leads me to believe that the same rock prevails there also.

One of the most remarkable features connected with the Louisiade Archipelago is the manner in which its shores are protected by the coral reefs which have frequently been alluded to in the preceding pages. The principal of these are good examples of that kind distinguished by the name of barrier reefs. Rossel Reef has already been described, and the only other large one of this description which we saw more than a portion of, is that partially encircling South East Island at a variable distance from the land, then passing to the westward as far as long. 152° 40′, where it ceases to shew itself above water; thence, however, the edge of a bank of soundings (represented on the chart by a dotted line) which is suddenly met with in coming from the deep blue unfathomed water to the southward, can be traced in a continued line to the westward as far as the Jomard Isles, whence it turns round to the northward for ten miles further, where our examination ended. This last may be considered as a submarine extension of the barrier, which probably reappears again above water, and passing to the northward of the Calvados Group, reaches as far as the northern entrance to Coral Haven, enclosing nearly all the high islands of the Archipelago. The expanse of water inside when not occupied by land usually exhibits a depth of from 15 to 30

fathoms, with numerous sunken patches of coral, and several reefs which partially dry at low water. The shores of the islands also are generally protected by fringing coral reefs, the largest of which is that extending off the west and south side of Piron Island to a distance of seven or eight miles, with a well defined border towards Coral Haven.

At the western portion of the Louisiade Archipelago the reefs seen by us exhibit great irregularity of outline, continuity, and width. Some are linear reefs, others atolls* more or less distinct in character, and the remainder are usually round or oval. Viewed as a whole they form an interrupted chain, with numerous deep water channels, which terminates in the West Barrier Reef of the chart, but is connected with the coast of New Guinea by a bank of soundings, with, probably, a well-defined margin. Many low, wooded islands are scattered along this line. I know of no distinguishing feature presented by the coral reefs of the Louisiade compared with those which I have seen elsewhere. One remarkable occurrence, however, connected with them, may be mentioned. While passing in the ship the most

* "An atoll differs from an encircling barrier reef only in the absence of land within its central expanse; and a barrier reef differs from a fringing reef in being placed at a much greater distance from the land with reference to the probable inclination of its sub-marine foundation, and in the presence of a deep water lagoon-like space or moat within the reef."—The Structure and Distribution of Coral Reefs, by C. Darwin, p. 146.

northern point of Rossel Island, I observed upon the reef, about a hundred yards inside its outer border, a series of enormous insulated masses of dead coral rising like rocks from the shallow water. The largest of these, examined through a good telescope from the distance of half a mile, was about twenty feet in length and twelve in height, with a well-defined high water mark. It formed quite a miniature island, with tufts of herbage growing in the clefts of its rugged sides, and a little colony of black-naped terns perched upon the top as if incubating. I had only once before seen a similar exhibition of such great and permanently elevated masses of dead coral upon a living reef—a phenomenon of much interest in connexion with Mr. Darwin's theory of the mode of formation of coral reefs. This was on a portion of the Great Barrier Reef of Australia, visited in company with Mr. Jukes, who has published a detailed account of it.* In both cases the only obvious explanation is that these huge blocks—too massive to have been hove up from deep water into their present position by any storm—reached their present level by the elevation of the sea bottom on which they were formed.

Before quitting the subject of the coral reefs of the Louisiade I may be permitted to express my conviction of the perfect manner in which many,

* Voyage of H.M.S. Fly, by J. B. Jukes, vol. i. p. 310.

perhaps all of the appearances which they present may be satisfactorily accounted for by the application of Mr. Darwin's theory. We have only to presume the whole of the Archipelago to have once formed part of New Guinea :— a supposition highly probable in itself (suggested even by a careful examination of the large charts), and strengthened by the total absence of signs of volcanic agency in what the theory in question would require to be an area of subsidence as opposed to those of elevation, such as are known to exist in parts of New Guinea.

The ethnology of New Guinea is involved in so much confusion and obscurity for the want of sufficient *data*, that even with the aid of some additional recently acquired information bearing upon the subject, I wish the following brief remarks to be regarded more as probable assumptions than as views the correctness of which admits of demonstration. Besides, to give all the proofs, such as they are, would cause much repetition of what has been already stated in the foregoing pages.

I must premise that most of our previous definite information regarding the inhabitants of New Guinea applies only to a small portion of the north-west coast of that great island in the neighbourhood of Port Dorey, which is known to be peopled by several distinct varieties of mankind, of which one (with which, as occupying the coast, we are best acquainted) is designated the Papuan, or Papua, as generally understood by that appellation when used

in its most restricted signification. These Papuans, according to Dumont d'Urville,* compose the principal part of the population of Port Dorey, and, judging from his description, I have no hesitation in referring to them also the inhabitants of the Louisiade Archipelago and the S.E. coast of New Guinea, and agree with Prichard (in opposition to the views of others) that they "constitute a genuine and peculiar tribe."†

Another variety among the inhabitants of Port Dorey, spoken of by M. d'Urville as the Harfours, is supposed by him to include, along with another race of which little is known—named Arfaki—the indigenous inhabitants of the north-west part of New Guinea. The Harfours, Haraforas, or Alforas, for they have been thus variously named, have often been described as inhabiting the interior of many of the large islands of the Malayan Archipelago, but, as Prichard remarks, "nothing can be more puzzling than the contradictory accounts which are given of their physical characters and manners. The only point of agreement between different writers respecting them is the circumstance that all represent them as very low in civilization and of fierce and sanguinary habits."‡ Their distinctness as a race has been denied with much apparent reason by Mr. Earl, and they are con-

* Voyage de l'Astrolabe, tom. iv. p. 603.

† Researches into the Physical History of Mankind, vol. v. p. 227.

‡ Ibid. p. 255.

sidered by Prichard to be merely various tribes of the Malayo-Polynesian race retaining their uncivilized and primitive state. Be this as it may, of these Harfours D'Urville states, that they reminded him of the ordinary type of the Australians, New Caledonians, and the black race of Oceania, from their sooty colour, coarse but not woolly hair, thick beards, and habit of scarifying the body. I mention these Harfours for the purpose of stating that no people answering to the description of them given above were seen by us in New Guinea or the Louisiade Archipelago.

It appears to me that there are two distinct varieties of the Papuan race inhabiting the south-east portion of New Guinea. The first occupies the western shores of the Great Bight, and probably extends over the whole of the adjacent country, along the banks of Aird River, and the other great freshwater channels. Judging from the little that was seen of them during the voyage of the Fly, these people appear to agree with the Torres Strait Islanders—an offshoot, there is reason to believe, of the same stock—in being a dark and savage race, the males of which go entirely naked.

The second variety occupies the remainder of the south-east coast of New Guinea and the Louisiade Archipelago. Their characteristics have already been given in this work, as seen at intermediate points between Cape Possession and Coral Haven; they agree in being a lighter coloured people than the preceding,

and more advanced in civilization: mop-headed, practising betel chewing, and wearing the breech-cloth. Without entering into the question of their supposed origin, I may state that, in some of their physical, intellectual, and moral characters, and also partially in their language, they seem to me to shew indications of a Malayo-Polynesian influence, probably acquired before their arrival in New Guinea, along the shores of which they seem to have extended, colonising the Louisiade during their progress, which at Cape Possession was finally arrested by their meeting with the other section of the race alluded to in the preceding paragraph.

It would be curious to see the effects produced at the point of junction of these two sections of the same race, probably somewhere between Aird River and Cape Possession. It is not unlikely that the Papuans of Redscar Bay and its vicinity derived the use of the bow and arrow from their neighbours to the westward,—and that the kind of canoe in use in Torres Strait was an introduction from the eastward, is rendered probable—setting aside other considerations—by a circumstance suggested by the vocabularies, *i.e.* that the name for the most characteristic part of the canoe in question—the outrigger float—is essentially the same from the Louisiade to Cape York.*

* Louisiade, *Sama*. Darnley Island, *Charima*.
Dufaure Island, *Sarima*. Prince of Wales Islands, *Sarima*.
Redscar Bay, *Darima*. Cape York, *Charima*.

I have alluded in a preceding part of this work (Vol. I. p. 232) to the circumstance that the small vocabulary obtained at the Louisiade may, along with others, throw some light upon the question, —whence has Australia been peopled?

It may safely be assumed that the aborigines of the whole of Australia (exclusive of Van Diemen's Land) have had one common origin; in physical character the natives of Cape York seem to me to differ in no material respect from those of New South Wales, South or Western Australia, or Port Essington,* and, I believe I am borne out by facts in stating that an examination of vocabularies and grammars (more or less complete) from widely remote localities, still further tends to prove the unity of the Australian tribes as a race.

* M. Hombron (attached to D'Urville's last expedition as surgeon and naturalist) considers—as the result of personal observation—that the aborigines of New South Wales exhibit certain points of physical difference from those of the North Coast of Australia, meaning, I suppose, by the latter, those natives seen by him at Raffles Bay and Port Essington. I may also mention that M. Hombron considers the Northern Australians to be a distinct sub-division of the Australian race, in which he also classes the inhabitants of the smaller islands of Torres Strait (as Warrior Island for instance) attributing the physical amelioration of the latter people to the fact of their possessing abundant means of subsistence afforded by the reefs among which they live, and the necessity of possessing well constructed canoes as their only means of procuring fish and dugong, stated by him to constitute the chief food of the Torres Strait islanders.—Voyage au Pole Sud, &c. Zoologie, tom. i. par M. Hombron, p. 313, 314, 317.

The two places from one of which the Australian population may be supposed to have been more *immediately* derived, are Timor on the one hand and New Guinea on the other: in the former case the first settlers would probably have landed somewhere on the north-west coast, in the latter, at Cape York.

Mr. Eyre believes that there are "grounds sufficient to hazard the opinion that Australia was first peopled on its north-western coast, between the parallels of 12° and 16° S. latitude. From whence we might surmise that three grand divisions had branched off from the parent tribe, and that from the offsets of these the whole continent has been overspread."* Proceeding still further Mr. Eyre has very ingeniously attempted to explain the gradual peopling of Australia, and even indicate the probable routes taken by the first settlers during the long period of years which must have elapsed before the whole continent was overrun by the tribes now collectively forming the Australian race. Dr. Prichard, when alluding to the probable mode of dispersion of the black tribes of the Indian Archipelago, conjectures that one of the branches during the migratory march probably passed from Java to Timor, and from thence to Australia.† Dr. Latham also inclines to the belief that Australia

* Journals of Expeditions of Discovery into Central Australia, &c. by E. J. Eyre, Vol. ii. p. 405.

† Researches into the Physical History of Mankind, Vol. v. p. 214.

was peopled from Timor and not from New Guinea, judging, in the absence of positive proof, from the probability that "occupancy had begun in Australia before migration across Torres Strait had commenced in New Guinea," inferred "from the physical differences between the Australian and the Papuan, taken with the fact that it is scarcely likely that the Papuans of Torres Strait would have failed in extending themselves in Australia had that island been unoccupied." Timor also is much nearer than New Guinea to the *remote* source—assumed to be the continent of Asia—whence the Australians have been derived.*

The unity of the Australian race being admitted implies one common origin, and that such was not derived from New Guinea, can scarcely, I think, be doubted. Upon examining the neighbourhood of the point of contact between the New Guinea-men and the Australians, we find Cape York and the neighbouring shores of the mainland occupied by genuine and unmixed Australians, and the islands of Torres Strait with the adjacent coast of New Guinea by equally genuine Papuans; intermediate in position between the two races, and occupying the point of junction at the Prince of Wales Islands we find the Kowrarega tribe of blacks. At first I was inclined to regard the last more as degraded Papuans than as improved Aus-

* Natural History of the Varieties of Man, by R. G. Latham, M.D. pp. 257, 253.

tralians: I am now, however, fully convinced that they afford an example of an Australian tribe so altered by contact with the Papuan tribes of the adjacent islands as at length to resemble the latter in most of their physical, intellectual and moral characteristics. Thus the Kowraregas have acquired from their island neighbours the art of cultivating the ground, and their superior dexterity in constructing and navigating large canoes, together with some customs—such as that of preserving the skulls of their enemies as trophies: while they retain the use of the spear and throwing stick, practise certain mysterious ceremonies connected with the initiation of boys to the rights of manhood—supposed to be peculiar to the Australian race—and hold the females in the same low and degraded position which they occupy throughout Australia.

That the Kowraregas settled the Prince of Wales Islands either prior to or nearly simultaneously with the spreading downwards from New Guinea of the Papuans of the islands, scarcely admits of absolute proof: but that the former have existed as a tribe for a long period of years is shewn by the changes which I presume to have taken place in their language. While this last unquestionably belongs to the Australian class, as clearly indicated by Dr. Latham's analysis of the pronouns,* one of the characteristic parts of the language, and, therefore, least liable to change, yet the occurrence in the Kowrarega of a considerable number of words re-

* See the Appendix.

sembling and often identical with those of the known Papuan languages of Torres Strait,* and which I believe to have been derived from the latter, seems to indicate a degree of long continued intercourse between the two races: for changes in language to so great an extent are not effected in a short space of time any more than the nearly complete fusion of two different races which has evidently taken place at the Prince of Wales Islands. Scarcely opposible to this supposition is the extreme improbability that the Papuans, who had nothing to gain from so comparatively inferior a race as the Australian, should be indebted to the latter for the words common to both found to exist in the Kowrarega and Miriam languages.

Another mode of procedure suggests itself to one endeavouring to trace the proximate origin of the Australians—and that is, to search the records of voyagers and others for any traces of such customs, the use of certain implements, &c., as are supposed to be most characteristic of these people. Yet, taking, for example, the boomerang † and throwing

* As means of comparison I used the Darnley and Murray Island vocabulary given in Jukes' Voyage of the Fly, also a MS. one of my own, which furnishes some additional particulars; some words from Massid given by Jukes; and a few from Mount Ernest procured by myself.

† Some of the "fowling sticks" of the ancient Egyptians closely resemble the boomerang in form and appear to have been used in a similar manner, but I am not aware that anything approaching it has been seen elsewhere. A specimen which

stick,* we find nothing approaching to either of these instruments in any part of New Guinea yet visited by Europeans: in the absence of any evidence to the contrary from Timor, they may be considered as true Australian inventions; and assuming the Australians to be the descendants of a colony from Timor, the circumstance of the natives of Melville Island – a part of Australia distant only 200 miles from their presumed place of origin— being ignorant of the use of the throwing stick, is in favour of part of this supposition. But a thorough investigation of the question of the origin of the Australian race, and their dispersion over the continent, although *now* I believe rendered quite practicable by the great mass of additional information contributed by voyagers and travellers since Mr. Eyre wrote upon the subject, is not consistent with the objects of this work.

suggested this remark is exhibited in the British Museum— Egyptian Room, Case 36, 37, No. 5646.

* The throwing stick is completely represented in the Aleutian Islands, (See in Ethnographical Room of British Museum, a specimen in case 16): in shape it differs from the Australian ones, (which themselves vary in different localities,) but the principle of construction and mode of use are precisely the same. In the islands of Tanna and New Caledonia a contrivance is in use to produce the same effect as the throwing stick in propelling the spear; but, apart from other considerations, the nature of the instrument (a piece of stiff plaited cord six inches long, with an eye in one end and a knot at the other) is such as quite to preclude the probability of the Australians having derived their throwing stick from this source.

CHAPTER III.

DEATH OF CAPTAIN STANLEY—SAIL FOR ENGLAND—ARRIVE AT THE BAY OF ISLANDS—KORORAREKA—FALLS OF THE KERI-KERI—PASSAGE ACROSS THE SOUTH PACIFIC—OCEANIC BIRDS—STAY AT THE FALKLAND ISLANDS—SETTLEMENT OF STANLEY—CALL AT BERKELEY SOUND—LASSOING CATTLE—RESUME OUR HOMEWARD VOYAGE—CALL AT HORTA IN THE AZORES—THE CALDEIRA OF FAYAL—ARRIVE IN ENGLAND.

Soon after our arrival in Sydney we had to lament the loss of our much respected commander, who died suddenly on March 13th, while apparently convalescent from a severe illness contracted during our last cruise,—induced, I understand, by long continued mental anxiety, and the cares necessarily devolving upon the leader of an expedition such as ours, of which probably no one who has not been similarly situated can ever fully comprehend the responsibility. Thus died at the early age of thirty-nine, but after the successful accomplishment of the chief objects of his mission, Captain Owen Stanley, who had long before won for himself an honourable name in that branch of the naval service to which he had devoted himself, and whose reputation as a surveyor and a man of science stood deservedly high. Although it would ill become me as a civilian attached to the expedition to enter upon the services*

* See O'Byrne's Naval Biographical Dictionary, p. 1109.

and professional character of my late captain, yet in common with many others, I cannot refrain from adding my humble testimony to his worth, by recording my deep sense of many personal favours, and the assistance which was always liberally rendered me during my natural history investigations throughout the voyage, whenever the more important objects of the survey permitted.

By this unfortunate event all previous arrangements regarding our future proceedings were annulled. It had been intended by Captain Stanley to return to England by way of Singapore and the Cape of Good Hope, adding to the charts of the Inner Passage as we went along the east coast of Australia, and making a careful survey of the Strait of Alass, between the islands of Lombock and Sumbawa. Captain the Hon. Henry Keppel of H.M.S. Mœander, as senior naval officer present, having appointed Lieutenant Yule to the vacancy in the command of the Rattlesnake, with orders to proceed direct to England, we left Sydney for that purpose on May 2nd. The Bramble was left behind in the colony, and in addition to her former crew, the limited accommodations of our ship were still further crowded with the greater number of the Port Essington marines, some invalids, and other passengers, making up the number on board to upwards of 230 persons.

A course was steered to pass to the northward of New Zealand without calling there, but shortly

after leaving Sydney some defects in the ship were found out, which rendered it necessary to put into the nearest port, as the principal one, causing a leak in the after gunroom, could not be repaired at sea. It was also considered expedient to get rid of the Asp in order to lessen the straining of the ship during the prospective passage round Cape Horn, which so much top weight was considered materially to increase. On May 14th the land about Cape Maria Van Diemen and the North Cape of New Zealand was in sight at daylight, appearing high and mountainous, with steep maritime cliffs. On our passage across from Australia we had seen few sea birds, but now albatrosses of three or four species were very numerous, together with a few petrels, chiefly *Procellaria Cookii*. Next morning we found ourselves to leeward of Cape Brett, having experienced a southerly current during the night of two knots an hour; it took us the whole day to work up into the Bay of Islands, and after dark we anchored in 28 fathoms, about six miles from the entrance of the Kawa-Kawa.

May 16th.—The view from our anchorage, although under the favourable conditions of fine weather, struck me as being dull and cheerless. The surface of the country is hilly and undulating, shewing patches of wood more or less extensive, and large tracts of fern of a dull greenish hue. The shores of the main land and the numerous islands exhibit every here and there argillaceous cliffs, and banks of a brown,

reddish, or yellow colour, from their steepness almost devoid of vegetation. In the morning it was a dead calm, but at length a light air sprang up and carried us into the bay of Kororareka, when we anchored in 4½ fathoms, mud and sand, off the village of the same name, also known as the township of Russell.

May 17th.—On landing at Kororareka, one finds that what from a distance appear neat and comfortable cottages lose much by close inspection. The township consists of about thirty small wooden houses, mixed up with many native hovels. It extends along the shore of a small bay, with a shingly beach in front and a swamp behind. The number of houses was formerly much greater, most of those now existing having been built since May 1845, when the greater part of the town was burnt down by the natives. Even now it supports two public houses, and several general stores, where necessaries may be procured at double the Sydney prices. At one time much trade was done here, before the duties imposed on the occasion of New Zealand becoming a British colony drove away the whalers which used to resort in great numbers to the Bay of Islands to refit; at present, besides the Rattlesnake, the only vessel here is a brig from Hobarton, bound to California, which put in to this place to get a new rudder. Live stock is plentiful and the prices are moderate.

There are many natives living in the settlement.

They afford a striking contrast to the wretched specimens of Australian aborigines one occasionally sees in the streets of Sydney. Many of the men are athletic and well made, and in their gait and expression exhibit much manliness of character. The faces of some of the principal people present good specimens of elaborate tattooing. The women appear strange figures from their ungainly modern dress, consisting merely of a loose smock of calico, fastened at the neck and wrists. Some were tolerably handsome (according to our notions of female beauty), and among them were several half castes. Their fashion of dressing the hair is curious,—in front it is cut short in a line across the forehead, but is allowed to grow long behind. We met Waka Nene, a Maorie chief, possessing considerable influence, especially in the neighbouring district of Hokianga, who, by siding with the English during the war, rendered such important services that the Government rewarded him with a pension of £100 per annum, and a house in Kororareka. Besides this he owns a small vessel or two employed in the coasting trade. I peeped into the hut of one of his people. A small entrance served the combined purposes of door, window, and chimney, the roof was so low as to preclude one from standing upright inside, a small fire was burning in the centre of the earthen floor, and a heap of mats and blankets in one corner pointed out a sleeping place.

Behind Kororareka one of a series of hills over-

looking the town is memorable as the site of the flagstaff, the cutting down of which by Heke was one of the first incidents of the Maorie war. On March 11th, 1845, an attack was made upon the place before daylight, by three of the disaffected chiefs. Kawiti with one division entered the town from the southward by a pass between two hills, and after a short conflict forced a party of marines and seamen from H.M.S. Hazard to retire with the loss of seven killed and many wounded. While this work was going on, a small detachment of soldiers occupying a blockhouse on the flagstaff hill was surprised by Heke and his party, who killed four men, and drove away the remainder, and levelled the flagstaff to the ground. The English residents took refuge on board the shipping, and two days afterwards the Maories sacked and burned the town with the exception of the two churches, and a few houses contiguous to the property of the Roman Catholic Mission.

The greater part of the country about the town is covered with fern and the *manuka* bush (*Leptospermum scoparium*),—the latter a low shrub with handsome white or pinkish flowers. In some of the ravines two species of tree-ferns of the genus *Cyathea* grow luxuriantly in the moist clayey soil. Every where one sees common English weeds scattered about, especially the sow-thistle and common dock, and a British land shell (*Helix cellaria*) has even found its way to New Zealand and is to be met with in some of the gardens.

Much rain had lately fallen, and many of the paths were partially converted into water-courses. I walked across to a neighbouring bay, and employed myself in searching for shells in the mud at low water. Some bivalves, common there—various *Cytherææ* and *Mesodesma Chemnitzii*—constitute an important article of food to the natives, who knew them by the name of *pipi*. A marshy place, at the mouth of a small stream, was tenanted by a curious wrinkled univalve, with a notch on the outer lip, *Amphibola avellana* of conchologists.

May 18*th*.—I joined a party made up to visit the falls of the Keri-Keri river, and we started, after an early breakfast, in one of the ship's boats. The morning was dull and rainy, and we had occasional showers during the forenoon. In an hour after leaving the ship we entered the estuary of the river, a large arm of the sea, which we followed for several miles. The scenery reminded me of that of some of the sea lochs on the west coast of Scotland, and although fern was here substituted for heath, the "Scotch mist" was perfectly represented at the antipodes. The country is scantily wooded, and the muddy shores are occasionally fringed with a small mangrove (*Avicennia tomentosa*). Here and there were a few settlers' houses, with the accompanying signs of cultivation. One of the small islands, and also a hill top on the northern shore, had an artificial appearance, their summits being levelled and the

sides scarped—they were the remains of former fortifiedvillages or *pahs*. At length the estuary narrowed, and assumed the appearance of a winding river, with low hilly banks covered with fern and bushes. One and a half miles from this brought us to a rocky ledge across the stream, preventing further progress in the boat, and marking the junction of the fresh and salt water.

Here Mr. Kemp, a schoolmaster of the Church Mission Society, has been located for upwards of thirty years. A well built store, a neat cottage and garden, and residences for a few Maories, complete the establishment. From this place a dray road leads to the extensive Missionary establishment at Waimate, distant about ten miles. Crossing the river, we started for the falls, in charge of a sharp little urchin who acted as guide. After leaving the narrow valley which the river has cut for itself through a superstratum of yellowish clay, the country becomes nearly level—a dreary plain, covered with fern and the manuka bush. The extensive tract of country now in sight is said to have once been a great *kauri* forest—a few of these noble trees (*Dammara Australis*) were pointed out to me from a distance. When about half way we left the road, and within the distance of a mile our guide contrived to lead us into five or six bogs, where we were up to our knees in water, besides entangling us in several thickets nearly as bad to penetrate as an Australian

scrub. At length we arrived in sight of the waterfall, then in full force from the quantity of rain which had lately fallen.

The Keri-Keri, after a long course through a country composed chiefly of upland moors and gently undulating hills, here suddenly precipitates itself over a rocky wall into a large circular pool eighty feet below, then continues its course for a while between steep and densely wooded banks. Behind the fall the rock is hollowed out into a wide and deeply arched cave, formed by the falling out of masses of columnar rock. A winding path leads to the foot of the fall, whence the view is very grand. Some of the party crept over the slippery rocks, and reached the cave behind the fall, where they were much gratified with the novelty of the scene. The luxuriant and varied vegetation in the ravine affords a fine field for the botanist. The variety of cryptogamic plants is very great – every rock, and the trunk of each tree, being covered with ferns, lichens, and mosses. Among the trees I noticed the pale scarlet flowers of the *puriri* or New Zealand Teak (*Vitex littoralis*), the hardest* and most durable

* This wood was much used in the construction of the *pahs* which, in 1845, under the Maorie chiefs Heke and Kawiti, long resisted the attacks of disciplined forces, aided by artillery. In reference to the *puriri* wood used in the palisading of one of these, it was officially stated, that "many of our six-pound shot were picked out of the posts, not having actually entered far enough to hide themselves."

of all the woods of the country. A short search among the damp stones and moss brought to light some small but interesting land shells, consisting of a pupiform *Cyclostoma*, a *Carocolla*, and five species of *Helix*. This leads me to mention, that although the number of New Zealand land shells hitherto described scarcely exceeds a dozen, this does not imply any scarcity of such objects in the country, as an industrious collector from Sydney, who spent nine months on the northern and middle islands, obtained nearly a hundred species of terrestrial and fluviatile mollusca. The scarcity of birds during our walk surprised me, for the only one which I saw on shore was a solitary kingfisher (*Halcyon vagans*): during our ascent of the Keri-Keri, however, many ducks (*Anas superciliosa*) flew past the boat, and gulls, terns, and two kinds of cormorants were numerous.

Returning to the road by a path which avoided the swamps our guide had taken us through, in little more than half an hour we reached Mr. Kemp's house, and after partaking of that gentleman's hospitality returned to the ship. On our way we landed at sunset for an hour upon a small island, which will probably long be remembered by some of the party as having furnished us with a supper of very excellent rock-oysters.

Having effected the necessary repairs, and disposed of the decked boat, we left New Zealand on May 22nd on our homeward passage. On July

5th having passed to the eastward of Cape Horn we bore up for the Falkland Islands, having taken forty-three days to traverse a direct distance of a little more than 5000 miles. During this period the wind was usually strong from the south-west, but on various occasions we experienced calms and easterly winds, the latter varying between N.E. and S.S.E. and at times blowing very hard with snow squalls. The lowest temperature experienced by us off Cape Horn was on the day when we doubled the Cape in latitude 57° S. when the minimum temperature of the day was 21° and the maximum 26°. This reminded some of us that we had now passed through not less than 75 degrees of temperature in the ship, the thermometer in the shade having indicated 96° during a hot wind in Sydney harbour.

A passage such as ours, during which at one time we were further from land than if placed in any other portion on the globe, must almost of necessity be a monotonous one. We saw no land, not even an iceberg, and very few vessels. For five or six successive evenings when in the parallels of 40° and 41° S. between the meridians of 133° and 113° W. we enjoyed the fine sight of thousands of large *Pyrosomæ* in the water, each producing a greater body of light than I ever saw given out by any other of the pelagic-luciferous mollusca or medusæ. The towing net was put over on several occasions but produced little or nothing to

repay Mr. Huxley for his trouble :—so that even a naturalist would here find his occupation gone were it not for the numbers of oceanic birds daily met with, the observation of whose habits and succession of occurrence served to fill up many a leisure hour. It being the winter of the southern hemisphere, the members of the petrel family, at other times so abundant in the South Pacific, were by no means so numerous as I had expected to find them, and in the higher southern latitudes which we attained before rounding Cape Horn, albatrosses had altogether disappeared, although they had been abundant as far to the southward as 41° S. The most widely dispersed were *Daption Capensis*—the pintado or Cape-pigeon of voyagers—*Procellaria lusitata*, *P. cærulea*, *P. Lessonii*, and *P. gigantea*, of which the first and second were the most numerous and readily took a bait towing astern. It is probable that all these species make the circuit of the globe, as they are equally distributed over the South Indian Ocean. Some interesting additions were made to the collection of *Procellariadæ* (commenced near the equator with *Thalassidroma Leachii*), and before leaving the Falklands I had captured and prepared specimens of twenty-two species of this highly interesting family, many members of which until the publication of Mr. Gould's memoir* were either unknown or involved in obscurity and confusion. Among these is one which merits

* Magazine and Annals of Natural History for 1844, p. 360.

special notice here, a small blue petrel, closely resembling *P. cærulea*, from which it may readily be distinguished by wanting the white tips to the central tail feathers. It turns out to be the *P. desolata*, known only by a drawing in the British Museum made more than half a century ago, from which this species was characterised. When in lat. 50° 46′ S. and long. 97° 47′ W. I saw *P. antarctica* for the first time; one or two individuals were in daily attendance while rounding Cape Horn and followed the ship until we sighted the Falkland Islands. I had long been looking out for *P. glacialoides*, which in due time made its appearance —a beautiful light grey petrel, larger than a pigeon; it continued with us between the latitudes of 40° and 58° S. and occasionally pecked at a baited hook towing astern.

One may naturally wonder what these petrels can procure for food in the ocean to the southward of 35° south latitude, where they are perhaps more numerous than elsewhere, and where the voyager never sees any surface-swimming fishes which they might pick up? It is, of course, well known that they eagerly pounce upon any scraps of animal matter in the wake of a vessel, hence it is reasonable to suppose that they follow ships for the purpose of picking up the offal, but they may also be seen similarly following in the wake of whales and droves of the larger porpoises. Almost invariably I have found in the stomach of the many kinds of alba-

trosses, petrels, and shearwaters, which I have examined, the undigested horny mandibles of cuttle-fish, which would thus appear to constitute their principal food; and, as all the petrel family are to a certain extent nocturnal, it seems probable that the small cuttlefish on which they feed approach the surface only at night.

July 8th.—Yesterday at noon we passed close to Beauchêne Island, a dreary, bushless place, half covered with snow. Vast numbers of pintados were about, also some albatrosses, the first that had made their appearance for several weeks back. In hopes of reaching an anchorage before dark we stood in for Bull Road, East Falkland Island, but after running fourteen miles, and sighting Sea-lion Islands, this was found impracticable. The ship was kept away to the eastward, and, after wearing several times during the night to avoid closing the land, a course was shaped to take us to the settlement. Passing inside of the Seal Rocks we rounded Cape Pembroke, on which is a tall beacon, and anchored at dark inside the entrance to Port William.

July 9th.—The thermometer fell to 18° during the night, and the water froze on the decks during the holystoning. A cold dreary aspect was presented when the sun rose upon the snow-clad country around, but the sight of a herd of cattle on shore conjured up visions of fresh beef and made ample amends. We beat up Port William, and,

passing by a narrow channel from the outer to the inner harbour, or Port Stanley, anchored off the settlement. We found a solitary vessel lying here—an English brig bound to California.

The settlement of Stanley was formed in July, 1844, by the removal thither of the former establishment at Port Louis,—Port William being considered preferable as a harbour, besides being easier of access and more conveniently situated for vessels calling there for supplies. The inner harbour, which communicates with the outer one by a passage not more than 300 yards wide, is four and a half miles in length by half a mile in width, with anchorage everywhere. The township extends along the centre of the south shore, as a small straggling village of wooden houses, the uncompleted residence of the Lieut.-Governor being the only one built of stone. The population, I was told, is about 300: of these thirty are pensioned soldiers, many of whom with their families are temporarily lodged in a large barrack, which curiosity one day led me to visit. Its inmates are all Irish, and appeared to be in any thing but comfortable circumstances, although such as work as labourers receive three shillings per diem, and mechanics are paid in proportion. One of them, who had served in Van-Diemen's Land, said he often envies the lot of a convict there, for "sure we are fretting to death to think that we have come to this in our old age after serving our king and country so long." They all bitterly complained of

having been deluded at home by highly-coloured reports of the productiveness of a country where grain will not ripen, and which has not yet been found capable of producing a tolerable potato. Of the remainder of the place little can be said. There are two good stores where we procured nearly everything we wanted at very moderate prices:—beef of very fair quality is sold at 2*d.* per pound, wild geese at 1*s.* 3*d.* each, and rabbits at four shillings a dozen. The only vegetables, however, were some small Swedish turnips, which we got by favour. Lastly, a ship may obtain water here with great facility from a small reservoir from which a pipe leads it down to the boat.

We had to remain at Port Stanley for thirteen days before the necessary observations for determining the rates of the chronometers could be obtained. During this period a thaw occurred, followed by hard frost and another fall of snow, making the country as bleak and desolate as before. By all accounts the winter has been unusually severe. The ground had been covered with snow for four weeks previous to our arrival, and many cattle and horses had perished; I also observed at the head of the harbour some beds of mussels, most of which were dead, having doubtless been frozen when uncovered at low water. The average mean temperature on board ship during our stay was 33°, the maximum and minimum being respectively 37° and 25°.

I was obliged to content myself with short excursions, for the inclemency of the weather would not permit of camping out at night. The appearance of the surrounding country may briefly be described:—ridges and peaks of grey quartz rock of moderate elevation form boundaries to shallow valleys, or become the summits of slopes extending with gentle declivity towards the shore. The ground almost everywhere, even on the hills, is boggy, with numerous swamps, rivulets, and pools. The peat in some places is as much as six feet in thickness; it forms the only fuel on the island, for not a single tree occurs to diversify the landscape, and few of the bushes exceed a foot in height. The general tint of the grass and other herbage at this season is a dull brownish-green. Bays and long winding arms of the sea intersect the country in a singular manner, and the shores are everywhere margined by a wide belt of long wavy sea-weed or kelp (*Macrocystis pyrifera*), which on the exposed coasts often forms immense beds of various species, some of which attain to gigantic dimensions.

On my first walk I was surprised at the extraordinary tameness of the smaller land birds: a thrush (*Turdus Magellanicus*) almost allowed me to knock it down with my cap, and some other birds were quite as familiar as our robin in winter—a pair of loggerhead ducks (*Brachypterus micropterus*) were quietly pluming themselves on the jetty at government-house, and others were swimming along shore with-

in pistol shot of a public road; at first I thought they were domesticated, and refrained from firing. The loggerhead is a large and heavy bird for a duck: one which I shot weighed eighteen pounds, and it has been recorded as sometimes weighing as much as twenty-nine pounds. From the disproportionate smallness of its wings it is incapable of flight, but employs these members as paddles in hurrying along the surface of the water when alarmed, using its feet at the same time with much splashing and apparent awkwardness, leaving a broad wake behind it on the water—hence the not inappropriate name of steamer which is sometimes applied to it. Not being fit to eat, and moreover from its strength and the closeness of its plumage difficult to kill, it is not much molested by sportsmen. Another bird very likely to attract attention is the kelp goose (*Bernicla antarctica*), generally seen in pairs along the rocky coasts: the plumage of the male is of a beautiful white, that of the female is dark and glossy, variously speckled and barred.

July 24th.—We sailed from Port Stanley yesterday at daylight, and after entering Berkeley Sound beat up as far as Hog Island, off which we anchored at sunset, at a distance from the old settlement of Port Louis of about two miles and a half. As the sole object in coming here was to obtain magnetic observations at the spot used for that purpose in 1842 by the Antarctic Expedition under Sir James Ross, for which one day would

suffice, we had little time to make excursions in the neighbourhood. Two parties were made up to shoot rabbits in some large warrens which have long been established on the shores of Johnson Harbour and at the head of Port Darlington, but they met with very little success. I preferred accompanying Capt. B. J. Sulivan for the purpose of seeing his gauchos use the lasso and bolas in catching some cattle required for the ship. This officer, who formerly commanded H.M.S. Philomel, employed for several years upon the survey of the Falklands, has been one of the first to avail himself of the proposals made by Government to develop the resources of these islands by throwing them open to private enterprise; in association with several gentlemen in England he has set on foot an establishment for the purpose of curing beef, hides, and tallow, which, it is expected, will be in full operation in the course of next year. The terms upon which settlers of the better class are invited to East Falkland are, I believe, the following:—the purchaser of a block of land of a quarter of a square mile at the minimum price of eight shillings an acre (£64), is entitled to a lease of 10,000 acres of contiguous land for the period of twenty years, at the rent of £10 per annum, with right of pre-emption. Also, according to part of an agreement between Government and Mr. Lafone (an Englishman residing at Monte Video), by which the latter has acquired a right to all the wild cattle on the island (estimated at

30,000 head) until the year 1860, he is bound to reclaim annually a certain number, and supply them to purchasers at the fixed rate of thirty shillings a head.

We landed on Hog Island where Capt. Sulivan's herd of eleven hundred cattle (besides a number of horses) had been kept during the winter, supported chiefly by the tussock grass fringing the shore, which they had cropped so closely that, being a perennial plant of slow growth, two years' rest would be required to enable it to regain its former vigour. Large patches of this magnificent grass *—*Dactylis cæspitosa* of botanists—along the shores of the main land have been destroyed by the cattle in their fondness for the nutritious base of the stem, a small portion of which, as thick as the little finger, has a pleasant taste and may be eaten by man, to whom it has occasionally furnished the principal means of subsistence when wandering in the wilds of these inhospitable islands. Great numbers of upland geese (*Chloephaga Magellanica*), chiefly in small flocks, were feeding on various berries and the tender grass. Although seldom molested on this island, they became rather wary after a few shots had been fired—still a sufficient number to answer our purpose were procured without much difficulty. Unlike

* For a full account of this useful plant, the growth of which in Britain in certain favourable maritime situations has been attempted on a large scale, I would refer to Botany of the Antarctic Voyage, by Dr. J. D. Hooker, p. 384, and pl. 136 and 137.

the kelp goose, which has a very rank taste, derived from its feeding chiefly upon the filmy sea-weeds covering the tidal rocks, the upland goose is excellent eating, and formed a welcome addition to our fare on board. Loggerheads and other ducks, cormorants, and grebes, were swimming about among the beds of kelp, and oyster-catchers of two kinds, gulls, kelp geese, and many other birds frequented the shores.

Meanwhile one of the gauchos rode over from Capt. Sulivan's establishment on the main by a ford passable at low water, and was sent back for a companion to assist him in catching the cattle. He was an old weather-beaten half-bred Pampas Indian of the name of Escalante, whose capability of enduring fatigue and privations of every kind were described as being remarkable even in a gaucho. At length the cattle were collected and driven up, and although eight hundred out of those composing the herd had been reclaimed only three months, yet the whole were easily managed by the two men on horseback, who rounded them in without difficulty upon the summit of a low hill close to the slaughtering place. A fine dun heifer four years old was the first selected; it was detached from the herd after some trouble, and pursued by both gauchos who, throwing off their ponchos, untwisted the bolas from round the waist, and, after swinging them round the head several times, threw them in succession at the beast's hind legs but without taking

effect, as each time the animal stumbled for an instant and the bolas slipped off the legs without becoming entangled. Stooping as he passed to pick up the bolas from the ground, Escalante uncoiled his lasso, and getting upon the cow's left flank, drove her at full speed towards the foot of the hill; when distant about twelve yards from the chase, he threw the lasso which he had kept swinging horizontally and slowly round his head for a few minutes back,—the noose fell over the animal's head and neck, catching one of the forelegs, which was instantly doubled up under the throat by the drawing of the noose, when the beast staggered and fell, but rose again immediately on three legs, and attempted to charge the horse and rider. Catching one of the forelegs and neck in this manner is considered the master-stroke in lassoing, being the most difficult of execution: Capt. Sulivan told me that a one-armed man at Monte Video, famous for his skill in lassoing, on one occasion for a wager caught nine out of ten bullocks in succession after this fashion. It was admirable to observe the manner in which the horse eased off the shock of bringing up an animal much heavier than itself, and by keeping a strain upon the lasso urged the furious beast onwards to a triangle which had been put up. The other gaucho, Andrez Pelaluya by name, meanwhile was riding up behind, and at length threw his lasso over the heifer's flanks, the slack of the noose falling down upon the ground,—in throwing

up her heels the hind legs were dexterously caught, when in a moment the beast was dragged over on one side and firmly moored. Leaving the horses to keep up the strain,—for the lasso is made fast to an iron ring in the saddle—the riders dismounted, and Escalante drawing out a long knife from his belt and renewing the edge upon a steel which he carried in one boot, quickly despatched the beast. A second heifer was afterwards picked out from the herd and caught by the horns; as the animal, maddened with terror, was galloped past with the lasso at full strain, I must confess that being a novice I did not feel quite comfortable, and instinctively clutched my gun, not being altogether sure that the lasso might not break,—but, although no thicker than the little finger, it is of immense strength, being made of plaited hide. This beast was secured and butchered pretty much as in the former instance; the bolas had been thrown at the hind legs, but caught only one, round which the three thongs and balls were so tightly interlaced as to require some patience in extricating them.

While slaughtering the cattle it was amusing to notice the familiarity of the carrion hawks, hundreds of which were collected about, perched upon the little hillocks all round, watching every movement of ours, or hovering over-head within the distance of a few yards. They are the *Milvago australis*, a bird of which the sexes differ so much in appearance, that they were pointed out to me as distinct

species. The settlers and others call them *rooks*, and another very common carrion bird of the vulture family (*Cathartes Aura*), is known here as the *john-crow*. On board the ship the sight of some quarters of beef secured to the mizen cross-trees had attracted numbers of these hawks, and upwards of a dozen might have been seen at one time perched upon the rigging, including one on each truck; on shore they made several attacks upon a pile of geese lying near the boat, and although repeatedly driven off with stones, they returned as often to make a fresh attempt.

July 25th.—Yesterday afternoon some of our people employed in cutting grass upon a small island close to the ship, stumbled upon a huge sea-lion asleep in one of the pit-like recesses among the tussocks. At first it was supposed to be a dead bullock, but the beast on being disturbed rose upon his fore flippers, and, displaying a formidable array of teeth, roared loudly* at the disturbers of his rest, who, being unarmed, rushed helter-skelter to the boat and went off to the ship. They returned immediately with an assortment of pikes, muskets, and pistols sufficient to ensure the destruction of a host of sea-lions; but after cautiously investing the

* "Sometimes when we came suddenly upon them, or waked them out of their sleep (for they are a sluggish sleepy animal), they would raise up their heads, snort and snarl, and look as fierce as if they meant to devour us; but as we advanced upon them, they always ran away; so that they are downright bullies." —Cook's Voyages, Vol. IV. p. 187.

place, it was discovered that the beast had very prudently got out of the way, nor this morning could he be found by a person who went to make a second search.

On this—Peat Islet of the chart—the tussock grass grows in great luxuriance, and to a stranger presents a most singular appearance. Its clusters of stems—frequently upwards of a hundred or more in a bunch—are raised from the ground upon a densely matted mass of old and decayed roots, two or three feet high, from the summit of which the leaves, frequently six feet in length, arch gracefully outwards. The tussock grass has been likened to a palm on a small scale, but altogether it reminded me more of the Xanthorhœa, or grass-tree of Australia. We saw many seals swimming about among the kelp, and on the shore found the carcases of several which had lately been killed with clubs, each of the skulls having been fractured by a blow at the root of the nose. They were of the kind known here as the hair-seal, the skin of which is of little value. It is still very abundant; but the fur-seal, from the indiscriminate slaughter of old and young for many years back has become scarce, and is now confined to a few favourite localities—*rookeries* as they are called, a name also applied at the Falklands to any great breeding place of penguins or other sea fowl. A few days ago a party of five sealers returned to the settlement after a short

absence, with the skins of no less than 120 fur-seals, worth, I was told, twenty-five shillings each.

Here I found two pairs of the sheathbill (*Chionis alba*), a bird whose place in the system has puzzled ornithologists. It has been variously considered as being one of the gallinaceous birds, the pigeons, the waders, and even as belonging to the web-footed order. Its habits are those of the oyster-catchers,* however different the form of the beak, which in the sheathbill is short, stout, and pointed, and enveloped at the base by a waxy-looking sheath. Its feet are like those of a gallinaceous bird, yet one which I wounded took voluntarily to the water and swam off to a neighbouring point to rejoin its mate. Cuvier, besides erroneously mentioning that it is a native of New Holland, states that it feeds on carrion; the stomachs of two which I examined contained sea-weed, limpets, and small quartz pebbles. The people here call it the rock-dove, and from its snow-white plumage it forms a conspicuous object along the shores.

We resumed our homeward voyage on July 25th, and thirty-six days afterwards crossed the equator in 24° west longitude. The last pintado left us 240

* When the above was written I had not seen the remarks on *Chionis* by M. Blainville, whose anatomical investigation assigns to it precisely the same position in the system—or next the oyster-catchers—which appeared to me to have been indicated by its habits.—Voyage de la Bonite, Zoologie, tom. i. p. 107. pl. (oiss.) ix.

miles within the tropics to follow an outward bound vessel. Another petrel much resembling it—a new species with longer wings and different markings, the head, neck, and upper surface being dark chocolate, and the lower parts white—was abundant between the latitude of 46° and 40° south, and between the parallels of 36° and 35° S., *Procellaria conspicillata* was numerous, but unfortunately I had no opportunity of procuring specimens of either.

Five days after leaving the Falkland Islands, we encountered a very heavy gale, commencing at south-east, and blowing hardest at east, when the barometer was down to 29.264,—next day the wind went round to the south-west and moderated. From the latitude of the entrance of the River Plate up to lat. 15° S., we experienced northerly winds between E.N.E. and W.N.W., after which we got winds commencing at S.W. and merging into the S.E. trade, which we may be said to have fairly got in $13\frac{1}{2}$° S. lat. and $23\frac{1}{2}$° W. long., and lost in 6° N. lat., and 22° W. long. We picked up the N.E. trade in lat. 13° N. and long. 24° W. and carried it up to lat. 29° N. and long. $37\frac{1}{2}$° W. I mention these particulars as the limits of the trade-winds as experienced by us were considered to differ considerably from what was to be expected at this season of the year. Gulf weed made its first appearance in lat. 24° N. and long. $35\frac{1}{2}$° W. but in small quantity, and was last seen in lat. 38° N. and long. $33\frac{1}{2}$° W. in detached pieces, mostly dead. About

31½° N. and 37¾° W. it was very plentiful, occurring in long lines from one to fifty yards in width, extending in the direction of the wind. Some pieces which were hooked up furnished on being shaken numbers of a minute univalve shell (*Litiopa*), many small fish—especially pipe-fish (*Syngnathus*),—and numerous crustacea (of which *Planes minuta* was the most plentiful), while several delicate zoophytes were encrusted or attached to the weed. In short each little patch of gulf weed seemed a world in itself, affording the shelter of a home to hundreds of minute and wonderful animals.*

Sept. 29th.—With only another day's supply of fresh water on board, we were glad this morning to have the islands of Pico and Fayal in sight. The view, as we closed the land, standing in from the south-westward for the roadstead of Horta, was very fine—on our left we had the beautiful island of

* The gulf weed is still regarded as of questionable origin. Has it—unlike all other sea weeds—always existed as a floating plant, or has it been detached by storms from the bottom of the sea and carried by the currents of the ocean into the well defined region it now occupies and out of which it is never met with in any great quantity? Without entering into proofs, the principal of which are its not yet having been found attached to the shore, and the invariable absence of fructification—it seems probable that those botanists are in the right who consider the gulf weed (*Sargassum bacciferum*) to be merely an abnormal condition, propagating itself by shoots, of *S. vulgare*, which in its normal state grows upon the shores of the Atlantic and its islands.—See note by Dr. J. D. Hooker in Memoirs of Geological Survey of Great Britain, vol. i. p. 349.

Fayal rising to the height of 3000 feet, its sides gradually sloping towards a range of maritime cliffs, while the lower grounds, in full cultivation, indicated—along with numbers of neat white-washed cottages and occasional villages—a well peopled and fertile country, contrasting strongly with those from which we had lately returned. To the right was Pico—with the summit of its peak (stated to be 7613 feet in height) peeping out from a mass of snowy clouds descending almost to the shore—and the centre was occupied by the more distant island of St. Jorge with a portion of Graciosa dimly seen projecting beyond its western end.

After having been for two months cooped up on board ship, I was glad to have a quiet walk on shore. In a ravine at one end of the town it was pleasing to see numbers of old acquaintances among the birds, bringing vividly to my recollection that home which we had now approached so closely. Martins were hawking about, the whitethroat warbled his short snatches of song among the bushes, and blackbirds and starlings flew past. And although engaged in the matter-of-fact occupation of searching for land-shells, by turning over the stones, I could not help being struck with the beauty of the terraced walks and overhanging gardens; the beautiful belladonna lily—here run wild in great abundance—made a fine show. At Point Greta the rock pigeons—the original stock of the domesticated race—were flying about in large flocks or

sunning themselves on the sea cliffs. A heavy shower of rain, by bringing out the land-shells, enabled me to pick up half-a-dozen species of *Helix*, *Bulimus*, and *Pupa*, at the foot of the hedge-rows; I was anxious to procure some to ascertain whether any were non-European forms; one was even quite a new species. On a white-flowered convolvulus with succulent leaves, I found numbers of the caterpillars of a large hawk-moth *(Sphinx Convolvuli)* which some ragged urchins who followed me shewed great dread of, running away when I picked one up and shouting to me to throw it away, else I should die. One was afterwards brought on board by an English resident—as a very venomous reptile, which had caused three or four deaths during his stay on the island. The recurved horn on the tail has been regarded as a sting, and the poor harmless creature, having once got a bad name, is now by the Fayalese, in the absence of snakes or scorpions, made to supply their place.

The town of Horta contains, I was told, upwards of 10,000 inhabitants. It is prettily situated on the shores of a small bay, extending between two rocky headlands. The landing-place is at the remains of a mole under the walls of Fort Santa Cruz, the only one of numerous ruinous fortifications where a few guns are mounted; even these are in so wretched a condition that the commandant admitted that it would require several hours' preparation before they

would be fit to return our expected salute, and seemed glad when told that as a surveying ship we were exempted from saluting the flags of other nations. A sea wall runs along the face of the town; parallel with this is the principal street, with others at right angles extending up the hill. The narrow streets are clean and well paved,—the houses, generally of one story, are built of tough grey trachyte.

Almost every inch of available ground upon the island of Fayal has been turned to good account: Indian corn is the chief agricultural product. With our usual bad fortune in this respect we were too late for the grapes and the oranges had not yet come in. The lower grounds are divided into small enclosures by stone walls, and subdivided by rows of a tall stout reed (*Arundo donax*), resembling sugar cane. Although taxes and other burthens are heavy, and wages very low, yet to a mere visitor like myself there appeared none of those occasional signs of destitution which strike one in walking through a town at home, nor did I see a single beggar.

In Fayal and Pico the most careless observer from the anchorage of Horta can scarcely fail to associate the number of smooth conical hills with former volcanic activity; and in looking over Capt. Vidal's beautiful charts of the Azores, nearly all the principal hills throughout the group are seen to have their craters or *caldeiras*. Fayal exhibits a fine specimen of one of these caldeiras in the central and

highest part of the island. At an elevation of a little more than 3000 feet, we reached the ridge forming the margin of a circular crater, rather more than a mile in diameter, and 700 feet deep. The outer slope is gradual, but the inner walls are steep, deeply furrowed by small ravines and watercourses, and covered with grass, fern and heath-like bushes. The bottom contains a considerable extent of swampy meadow land, a shallow lagoon, and a small hill with a crater also partially filled with water. The view here is magnificent, enhanced, too, at times by the rolling volumes of mist overhead, at one moment admitting of a peep at the blue sky above, in the next concealing the rim of the crater and increasing in idea the height of its wall-like sides. The caldeira, I may add in conclusion, is said to have been formed during the last eruption of Fayal in 1672, but this statement appears to be very doubtful.

We resumed our homeward voyage on October 5th, and on November 9th, the Rattlesnake was paid off at Chatham, after having been in commission upwards of four years.

ACCOUNT

OF

MR. E. B. KENNEDY'S

EXPEDITION FOR THE EXPLORATION

OF THE

CAPE YORK PENINSULA,

IN

TROPICAL AUSTRALIA.

In addition to the brief account which already forms part of the Narrative of the Voyage of H.M.S. Rattlesnake, I have thought it would add to the interest of this work and the gratification of its readers, were I to give under a distinct head a detailed history of the exploring expedition conducted by the late Mr. Edmund B. Kennedy, derived from a pamphlet printed in Sydney, and scarcely procurable in this country. It includes the interesting narrative of Mr. W. Carron, the botanist attached to the expedition in question; also the statements of the aboriginal black who witnessed the death of his gallant master—of Dr. Vallack who took an active part in rescuing the survivors—and of Mr. T. B. Simpson who proceeded in search of the remainder of the party, whose fate was still in a measure uncertain, and succeeded in recovering some of Mr. Kennedy's papers.

NARRATIVE OF MR. WM. CARRON.

We left Sydney on the 29th of April, 1848, in the barque "Tam O'Shanter" (Captain Merionberg), in company with H.M.S. "Rattlesnake."

Our party consisted of the following persons: Mr. E. B. Kennedy, (leader), Mr. W. Carron, (botanist), Mr. T. Wall, (naturalist), Mr. C. Niblet, (storekeeper), James Luff, Edward Taylor, and William Costigan, (carters), Edward Carpenter, (shepherd), William Goddard, Thomas Mitchell, John Douglas, Dennis Dunn, (labourers), and Jackey-Jackey, an aboriginal native of the Patrick's Plains tribe, of the Hunter River district.

Our supplies and equipment for the journey had been most fully considered, and were estimated by Mr. Kennedy as amply sufficient for a journey so short as what we then anticipated. Our live stock consisted of twenty-eight horses, one hundred sheep, three kangaroo dogs, and one sheep dog. Our dry provisions comprised one ton of flour, ninety lbs. of tea, and six hundred lbs. of sugar. Besides these necessary supplies for subsistence on the road, we took with us twenty-four pack-saddles, one heavy square cart, two spring carts, with harness for nine horses, four tents, a canvas sheepfold, twenty-two

pounds gunpowder, one hundred and thirty lbs. shot, a quarter cask of ammunition, twenty-eight tether ropes (each twenty-one yards long), forty hobble chains and straps, together with boxes, paper, &c., for preserving specimens, fire-arms, cloaks, blankets, tomahawks, and other minor requisites for such an expedition, not forgetting a supply of fish-hooks and other small articles, as presents for the natives.

After a tedious passage of twenty-two days, we arrived at Rockingham Bay on the 21st May; and even here, at the very starting point of our journey, those unforeseen difficulties began to arise, which led us subsequently to hardships so great and calamities so fatal.

On casting anchor, Mr. Kennedy, in company with Captain Merionberg, proceeded in a boat to examine the shores of the Bay, and to determine on a suitable landing place for the horses, but returned in the evening without having been able to discover one.

The attempt was renewed the next morning, and continued during the entire day; and on the morning of the 23rd of May Mr. Kennedy and Captain Merionberg returned to the ship with the intelligence that they had discovered a spot where the horses might be landed with tolerable safety, and where, too, there was plenty of grass and water. This was an important desideratum, as we had lost one horse and eleven sheep on the voyage.

The water round the shores of the bay was very

shallow, in consequence of which the vessel could not approach close inshore, but was compelled to cast anchor about a quarter of a mile off, and this distance the horses had to swim.

In the afternoon the vessel was anchored off the landing place, and early on the following morning (May 24th), the tents, tether ropes, and sheepfold were taken ashore, with a party to take care of the horses when landed. At ten o'clock A.M., slings having been prepared, we commenced hoisting the horses out of the hold, and lowering them into the water alongside a boat, to the stern of which the head of each horse was secured, as it was pulled ashore. One horse was drowned in landing, but all the others were safely taken ashore during the day. The weather this day was very cold, with occasional showers of rain.

During the time occupied by landing the horses, a number of aboriginal natives assembled on the beach; they evinced no symptom of hostility, but appeared much surprised at our horses and sheep. White men they had frequently seen before, as parties have landed on the beach from surveying vessels.

We found no difficulty in making them comprehend that we desired to be friendly with them, and they advanced towards us with green boughs in their hands, which they displayed as emblems of peace. We met them with our arms extended and our hands open, indicating that we had no imple-

ments of war with us. We made them a present of two circular tin plates, with Mr. Kennedy's initials stamped upon them, and chains to hang them round the neck; we also gave them a few fish-hooks, and they accepted our presents with great demonstrations of pleasure. We made signs for them to sit down about 200 yards from the spot where the horses and sheep were being landed, and marking a line upon the sand we made them understand that they were not to cross it to approach us. One of our party was placed amongst them to enforce this regulation, which he did with little difficulty, although they expressed great curiosity as to various articles brought on shore from the ship.

These natives appeared to be very fine strong men, varying much in intelligence and disposition. I entered into such conversation with them as we were enabled to hold, and I soon found that while some were eagerly anxious to learn the names of different articles and their uses, others were perfectly indifferent about them.

We pitched our tents about two hundred yards from the beach, forming a square, with the sheep-fold in the centre. Mr. Kennedy came on shore in the morning to superintend the arrangements, and after giving the necessary directions and instructions, returned to the ship. The party left ashore in charge consisted of myself, Wall, Dunn, Carpenter, and Douglas. Our provisions were supplied from the ship, in order that no time might be lost in

getting all our stores and implements in proper order for starting.

A few yards from our camp was a fresh water creek, from which, although the tide ran into it about one hundred yards—where it was stopped by a small bank—we could obtain excellent water. The grass around was very long, and mostly of very coarse descriptions, consisting chiefly of a species of *Uniola* growing in tufts, and an *Agrostis* with creeping roots and broad blades; the horses seemed to like the *Uniola* best. A little to the northward of our camp were very high and almost perpendicular rocks, composed mostly of micaceous schist, covered with various epiphytal *orchides* and ferns.

The labour of the day being ended, and most of our stores landed, the greater number of our party came ashore to pass the night; and after having tethered the horses in fresh places, we assembled at supper, the *materiel* of which (beef and biscuit) was sent from the ship. We then took possession of our tents, one square tent being allotted to Mr. Kennedy; Niblet, Wall, and myself occupied a small round one; Taylor, Douglas, Carpenter, Mitchell, and Jackey, a large round tent; and Luff, Dunn, Goddard, and Costigan, the other.

Mr. Kennedy's tent was 8 feet long, by 6 feet, and 8 feet high, and in it were placed a compact table, constructed with joints so as to fold up, a light camp stool, his books and instruments. The two larger round tents were pyramidal in shape,

seven feet in diameter at the least, and nine feet high. The small tent was six feet in diameter, and eight feet high.

Every man was then supplied with one pair of blankets, one cloak, a double-barrelled gun or carbine, a brace of pistols, cartridge box, small percussion cap pouch, and six rounds of ammunition. The arrangement for preserving the safety of the camp from attack was, that every man, with the exception of Mr. Kennedy, should take his turn to watch through the night—two hours being the duration of each man's watch—the watch extending from 8 P.M. till 6 A.M. During the night the kangaroo dogs were kept chained up, but the sheep dog was at large.

The position of this our first encampment was near the northern extremity of Rockingham Bay, being in latitude 17° 58′ 10″ south, longitude 146° 8′ east. The soil, where our cattle and sheep were feeding, was sandy and very wet. The land, from the beach to the scrub in the swamp beyond, was slightly undulating, and very thickly strewed with shells, principally bivalves.

On the morning of the 25th May, a party commenced landing the remainder of our stores, and it being a fine morning, I went out to collect specimens and seeds of any new and interesting plants I might find. On leaving the camp I proceeded through a small belt of scrub to the rocks on the north; the scrub was composed of the genera *Flagellaria*,

Kennedya, *Bambusa* (bamboo), *Smilax*, *Cissus*, *Mucuna*, and various climbing plants unknown to me: the trees consisted principally of *Eugenia*, *Anacardium*, *Castanospermum* (Moreton Bay chestnut), a fine species of *Sarcocephalus*, and a large spreading tree belonging to the natural order *Rutaceæ*, with ternate leaves, and axillary panicles of white flowers, about the size of those of *Boronia pinnata*. At the edge of the rocks were some fine tree ferns (*Dicksonia*), with the genera *Xiphopteris*, and *Polypodium*; also some beautiful epiphytal *Orchideæ*, among others a beautiful *Dendrobium* (rock lily), with the habit of *D. speciosum*, but of stronger growth, bearing long spikes of bright yellow flowers, the sepals spotted with rich purple. I found also another species with smaller leaves, and more slender habit, with spikes of dull green flowers, the column and tips of the sepals purple: and a very fine *Cymbidium*, much larger than *C. suave*, with brown blossoms, having a yellow column.

I proceeded along the edge of a mangrove swamp for a short distance, and entered a fresh water swamp about a mile from the beach, covered with very thick scrub, composed of large trees of the genus *Melaleuca*, running for the most part from forty to fifty feet high. Here also I first found a strong-growing climbing palm (*Calamus Australis*), throwing up a number of shoots from its roots, many of them 100 feet long, and about the thickness of a man's finger, with long pinnatifid leaves, covered with sharp

spines—and long tendrils growing out of the stem alternately with the leaves, many of them twenty feet long, covered with strong spines slightly curved downward, by which the shoots are supported in their rambling growth. They lay hold of the surrounding bushes and branches of trees, often covering the tops of the tallest, and turning in all directions. The seed is a small hard nut, with a thin scaly covering, and is produced in great abundance.

The shoots, which are remarkably tough, I afterwards found were used by the natives in making their canoes. These canoes are small, and constructed of bark, with a small sapling on each side to strengthen them, the ends of which are tied together with these shoots.

The growth of this plant forms one of the greatest obstacles to travelling in the bush in this district. It forms a dense thicket, into which it is impossible to penetrate without first cutting it away, and a person once entangled in its long tendrils has much difficulty in extricating himself, as they lay hold of everything they touch. On entering the swamp to examine plants, I was caught by them, and became so much entangled before I was aware of it, that it took me nearly an hour to get clear, although I had entered but a few yards. No sooner did I cut one tendril, than two or three others clung around me at the first attempt to move, and where they once clasp they are very difficult to unloose. Abundance of the shoots, from fifteen to twenty feet long, free

from leaves or tendrils, could be obtained, and would be useful for all the purposes to which the common cane is now applied.

At this spot also I met with *Dracontium polyphyllum*, a beautiful plant, belonging to the natural order *Aroideæ*, climbing by its rooting stems to the tops of the trees, like the ivy. This plant has narrow pointed leaves, four inches long, and produces at the ends of the shoots a red spatha, enclosing a cylindrical spadix of yellow flowers.

In many parts the swamp was completely covered with a very strong growing species of *Restio* (rope-grass). On the open ground, between the beach and the swamp, were a few large flooded-gums, and some Moreton Bay ash trees, and near the beach I found the *Exocarpus latifolia*.

On the beach, too, just above high water mark, was a beautiful spreading, lactescent tree, about twenty feet high, belonging to the natural order *Apocyneæ*, with alternate, exstipulate, broad, lanceolate leaves, six to eight inches long, and producing terminal spikes of large, white, sweet-scented flowers, resembling those of the white *Nerium oleander*, but much larger. I also met with a tree about twenty feet high, belonging to the natural order *Dilleniaceæ*, with large spreading branches, producing at the axilla of the leaves from three to five large yellow flowers, with a row of red appendages surrounding the carpels,—and a fine species of *Calophyllum*, with large dark green leaves, six to eight inches long,

two and a-half to three inches broad, beautifully veined, and with axillary racemes of white, sweet-scented flowers; the seed being a large round nut with a thin rind, of a yellowish green colour when ripe. There were many other interesting plants growing about, but the afternoon turning out wet, I left their examination to stand over till finer weather.

Growing on the beach was a species of *Portulaca*, a quantity of the young shoots of which I collected, and we partook of them at our supper, boiled as a vegetable.

In the evening, after watering our horses, we took them to the camp and gave each of them a feed of corn which we had brought with us for the purpose of strengthening them previous to our starting from Rockingham Bay, on our expedition; but although the grass on which they had been depasturing was coarse, they were with difficulty induced to eat the corn, many of them leaving it almost all behind them. We then tethered them and folded our sheep, one of which we killed for food. The ration per week on which the party was now put, was one hundred pounds of flour, twenty-six pounds of sugar, and three and a-half pounds of tea, with one sheep every alternate day.

This night too we commenced our nightly watch, the whole of the stores being landed and packed in the camp. During nearly the whole of the day a tribe of natives was watching our movements, but

they seemed to be quite peaceably inclined; the weather was very cold, and at night the rain set in and continued to fall, almost without intermission, till morning.

The next morning (May 26th) was very wet and cold; but after securing our horses, I again went out to search for, and examine plants, although it was too rainy to collect seeds or specimens. On a *Casuarina* near the swamp, I saw a beautiful *Loranthus* with rather small oval leaves,—panicles of flowers, with the tube of the corolla green, and segments of the limb dark red—of a dwarf bushy habit. This beautiful parasite covered the tree, and was very showy. The afternoon turning out fine and warm, I collected several specimens and sorts of seeds. In the open ground grew a beautiful tree producing large terminal spikes of yellow flowers, with broad, and slightly cordate leaves; it belongs to the natural order *Bignoniaceæ*.

The open ground between the beach and the swamp varied in width from half a mile to three or four miles; it was principally covered with long grass, with a belt of bushy land along the edge of the beach; the bush consisting principally of *Exocarpus*, with dark green oval leaves, near an inch long; two dwarf species of *Fabricia*, one with white, the other with pink flowers; a species of *Jasminum*, with rather large, white, sweet-scented flowers; and a few acacia trees, with long, linear, lanceolate phyllodia, and racemose spikes of bright

yellow flowers. There also grew the genera *Xanthorrhœa*, *Xerotes*, and *Restio* (rope-grass.)

There were a great many wallabies near the beach, but they were very wild. While returning to the camp in the evening, I met several natives who had been out fishing. Most of the fish they had taken had been speared, only a few having been caught with hooks. I remained with them some time, and learned some of their expressions. Fresh water they call "hammoo,"* salt water, "mocull;" their dogs—the same species as the native dogs found near Sydney—they call "taa-taa." We had not as yet seen any of their women, as they were encamped at some distance from us.

Near the beach, by the side of the salt water creek, I saw a beautiful species of *Ruellia* with terminal spikes of blue flowers, and spiny-toothed leaves, and a bushy shrub eight or ten feet high—with alternate exstipulate, simple, oval leaves—bearing a solitary, axillary, round fruit, resembling a greengage plum; the fleshy pulp covering the hard round stone has rather a bitter taste, but it is not disagreeable when ripe. It acts as a laxative if eaten in any quantity, and is probably *Maba laurina*.

On the following morning, May 27th, when the horses were watered and fed, I commenced digging a piece of ground, in which I sowed seeds of cabbage, turnip, leek, pumpkin, rock and water melons,

* *Kāmo*, at Goold Island, only a few miles distant.

pomegranate, peach stones, and apple pips. On the two following days, May 28th and 29th, I remained in the camp all day.

The next morning, May 30th, Mr. Kennedy and three others of the party rode out to examine the surrounding country, and to determine in what direction the expedition should start, the remainder staying at the camp, busily occupied with preparations for our departure into the wilderness. The flour was put into canvass bags, holding 100 lbs. each, made in the shape of saddle-bags, to hold 50lbs. weight on each side. The sugar we put into two large tin canisters, made to fit into one of the carts, and the tea was packed in quarter-chests. The surplus stores, comprising horse-shoes, clothes, specimen boxes, &c., which would not be required before our arrival at Cape York, were sent on board H.M.S. Rattlesnake, which it was arranged should meet us at Port Albany. During the day one of the party shot a wallaby on the beach, which made very good soup.

During the morning of the next day (May 31st) I was employed in procuring specimens and seeds of various plants, and in the afternoon we all resumed our preparations for starting, as we expected Mr. Kennedy back next day. He however did not then arrive in the camp, and on the following afternoon I obtained specimens of a very pretty plant of the natural order *Onagrariæ*, with opposite, oblong, simple leaves, and large purple flowers.

The following day (June 3rd) Mr. Kennedy and his party returned to the camp, with the intelligence that it was impossible to proceed in a north or north-westerly direction, in consequence of the swamps. Mr. Kennedy had penetrated them in some places, where the scrub was not too thick, but could not get through them in any place, on account of the water, and the dense scrub. He informed us that he found we should be obliged to cross a river on the beach to the south-west of the camp before we could hope to make any progress.

The two following days were occupied with completing our arrangements for starting; as it was determined on the following morning to strike our tents and proceed at once on our expedition.

As I may now consider our expedition as fairly begun, it may, for the sake of clearness and arrangement, be advisable to continue my narrative in the form of a journal; detailing from day to day the various occurrences which took place. It must be remembered, however, that in narrating the particulars of our journey, I am obliged to trust largely to memory, and to very imperfect memoranda; and to these difficulties must I refer, in excuse for the defects, with which I am well aware this narrative abounds.

Up to the present time, the whole of the party, and especially its unfortunate leader, had remained in good spirits, and, buoyed up with sanguine hopes

of success, were eager to set out on their pilgrimage of discovery.

June 5th.—We breakfasted at an early hour this morning, and proceeded at once to harness our horses to the carts, three to each cart. The carts contained about seven hundred-weight each. This business having been completed, and the pack-horses saddled and loaded, we started at nine o'clock A.M., and proceeded along the beach. Mr. Kennedy and Jackey rode in front, followed by the three carts. After Wall, riding one horse and leading two pack-horses, came Goddard, Douglas, Mitchell, and Dunn, leading three pack-horses, then Niblet in their rear, riding one and leading two horses, followed by Carpenter driving the sheep, and myself on foot, carrying Mr. Kennedy's mountain barometer, which he had given into my charge during the journey; and I was also to take the time for that gentleman, in his observations.

After travelling in this order about two miles, we came to a large river,* emptying itself into Rockingham Bay. This river was about one hundred and fifty yards wide, and although the tide ran up it about a mile, fresh water was procurable from it considerably nearer the sea.

At nearly high-water I tasted fresh water on one side of the river, and salt on the other, and about two hours after high water, there was no difficulty in obtaining plenty of excellent water on either side of the river, in different places. There is a great

* Mackay River of the Admiralty chart of Rockingham Bay.

deal of fresh water running into the sea here, and at the same distance from the sea as the mouth of the river, it is in some places mixed with salt water, whilst in others it is quite fresh. The banks of this stream are low and sandy, and a short distance above where we joined it, it is skirted on either side by a thick mangrove swamp, for the distance of about a mile, where it joins the fresh water swamps, covered with thick scrub. On my proceeding up the river, it became narrower in its channel as it approached the swamps, from which it appeared to be principally supplied. It had a tortuous course, and when I left it, was turning to the westward.

A boat was sent to us by Captain Stanley of H.M.S. Rattlesnake to assist us in carrying our stores across, which we effected with some difficulty by ten o'clock, P.M., the horses and some of the sheep swimming across, while the remainder of the latter were taken in the boat. We pitched Mr. Kennedy's tent on sand, at the side of the river, and it being dark, and not knowing where to obtain fresh water on that side of the river, I and five others recrossed it, and went back about three-quarters of a mile to a small creek running parallel to the beach. We filled our kegs, and returned to the camp in time to have supper by twelve o'clock, after which we rolled ourselves in our blankets, and, wearied by the fatigues we had undergone, slept soundly till daylight.

This was a very harassing day to us, as we were all constantly in the water, loading and unloading

the boat. It is but just to state, that Captain Stanley of the Rattlesnake, both in landing our horses and stores, and in crossing this river, rendered us every assistance in his power, and seemed throughout to take a strong interest in the expedition, and its object.

While landing our things at the other side of the river, the natives assembled in great numbers about our luggage. As they appeared to be friendly, we permitted them to come within about 150 yards of our landing place; with some few we had a little difficulty, but for the most part they would sit down quietly as soon as a sign was made for them to do so.

June 6th.—Early this morning Lieutenant Simpson of the Rattlesnake left us, he having stayed all night at the camp, and we were now left entirely to our own resources. We loaded our carts and pack-horses, and proceeded about three miles inland, but again finding it impossible to cross the swamps, we returned to the beach, and about dusk came to another river, also emptying itself into Rockingham Bay, and two miles south-west of the first we had to cross. This river was much wider than the first, being about two hundred yards wide where we crossed it near the mouth. At the mouth of this river is a sand-bank, over which the water is about four feet deep. Inside the bank the water is ten feet deep. The tide flows up for about a mile; there appears to be a great quantity of fresh water discharged into the sea from the river, which,

I think, is principally supplied from the swamps. These swamps lie at the foot of a high mountain range, and probably the rivulets descending from the range spread over the flat ground, and form channels by which they reach the sea. Fresh water can be obtained on either side the river very near the sea. I tasted fresh water on one side, salt in the middle, and slightly brackish on the other side, as we crossed over it. Small boats only can enter this river, on account of the sand-bank at the mouth. Its course turned to the south-west about two miles up. Its banks were sandy and barren, at least close to the water; on the north side of the river there is a mangrove swamp, extending some distance up the stream; on the south side the banks are higher, and are covered with *Casuarinas* and *Acacias*, the soil being sandy and pretty well covered with grass, and the land slightly undulating, for about one and a-half or two miles up the river. It being too late to think of crossing the river to-night, we hobbled our horses, and having pitched Mr. Kennedy's tent, slept on the sand till morning.

June 7th.—As soon as we had breakfasted this morning, we prepared to cross, to assist us in which undertaking we contrived to construct a sort of punt by taking the wheels and axletrees off one of the carts. We then placed the body of the cart on a large tarpaulin, the shafts passing through holes cut for them, and the tarpaulin tightly nailed round them. The tarpaulin was then turned up all round,

and nailed inside the cart; by this means it was made almost water-tight. We then fastened our water-bags, filled with air, to the sides of the cart, six on each side, and a small empty keg to each shaft. We now tied our tether ropes together, and made one end fast on each side of the river, by which means our punt was easily pulled from one bank to the other. By this contrivance we managed to get most of our things over during the day, and at night a party slept on either side, without pitching the tents.

June 8th.—One party continued employed in getting the remainder of the things across the river, whilst the others went in search of the horses, which had rambled to some distance to seek for better grass. The grass had hitherto continued plentiful in places all the way. The horses were brought up to the river by eleven A.M., and were with some difficulty got across, after which they were hobbled, and we camped for the night near the beach, in good grass.

June 9th.—Mr. Kennedy, with Jackey and three others, left the camp this morning for the purpose of ascertaining the most practicable route for our carts. During the day a great number of natives came around our camp, and appeared very friendly; they are a finer race of men than those usually seen in the southern districts of the colony, but their habits and mode of life seem very similar. They left us before dark, without making any attempt at plunder.

June 10*th.*—Mr. Kennedy returned to the camp this evening; he still found the swamps were impassable, the water and mud lying on them in many parts from three to four feet deep; there were patches of dry land here and there covered with good but coarse grass.

We saw here large flocks of black and white ducks, making a whistling noise similar to some I have seen near Port Macquarie. Mr. Wall shot three of them, and they proved very good to eat, but they were not new, being *Dendrocygna Eytoni*.

June 11*th.*—We started early this morning and proceeded along the beach for three or four miles, when we came to another river, similar in its character to the one we crossed on the 8th, with low sandy banks, and dry bushy land on each side. We unloaded and hobbled our horses, and prepared our punt as before.

Near to this spot we came upon a native encampment, consisting of eighteen or twenty huts of an oval form, about seven feet long, and four feet high; and at the southern end of the camp, was one large hut eighteen feet long, seven feet wide, and fourteen feet high. All of them were neatly and strongly built with small saplings, stuck in the ground, arched over, and tied together at the top with small shoots of the climbing palm which I have already described. They were covered with the bark of the large *Melaleucas* which grow in the swamps, fastened to the saplings with palm shoots. A small opening is left at one end, from the ground

to the top, and the floors were covered with long dried grass.

The natives being absent from the camp, I entered the large *gunyah*, and found in it a great shield of solid wood, two feet in diameter, convex on one side, and flat on the other. The convex side was curiously painted red, in circular rings and crosses. On the flat side was a handle, cut out of the solid wood. In the same hut I found four wooden swords, three and a half feet long, and four inches broad, sharp at both edges, and thick in the centre, with a slightly-curved, round handle, about six inches long. They were made of very hard wood, and were much too heavy to wield with one hand. I also found a number of fishing lines, made from grass, with hooks attached of various sizes, made from mussel shells.

After I had carefully examined all these things I left them where I found them. In the centre of the camp were four large ovens, for cooking their food. These ovens were constructed by digging a hole in the ground, about three feet in diameter, and two feet deep. The hole is then filled to within six inches of the top with smooth, hard, loose, stones, on which a fire is kindled, and kept burning till the stones are well heated. Their food, consisting principally of shell and other fish, is then placed on the stones and baked.

There were no vessels in the camp in which they could boil anything, and it is my opinion, from

what I afterwards saw of their habits, that their cookery is confined to roasting and baking. In the camp were several large shells for holding water, and some calabashes, made by taking out the inside of a kind of gourd which grows plentifully near the camp. These calabashes would hold from one to three pints each.

June 12th.—This morning Taylor endeavoured to cross the river with the rope for working our punt, but although an expert swimmer, and a very strong man, he was unable to do so, from the strength of the tide which was running out. We saw several natives fishing in the river from their canoes, which are about five feet long and one and a-half feet wide, made of bark, with small saplings tied along the side, and are paddled with small pieces of bark held in either hand. We made signs to them to come to us, with which three of them complied. We made them understand that if they would take our rope across, and make it fast to a dead tree on the other side of the river, we would give them a tomahawk. They consented to undertake the task, and after great exertion succeeded in performing it, and received their reward, with which they seemed quite satisfied and highly pleased. We succeeded in getting everything across the river by 10 o'clock P.M., for the moon being up, we would not stop till we had finished. Our horses we took about a quarter of a mile up the river, and they crossed where it was narrower and

not so deep. Several natives, who had not yet seen our horses, assembled on the banks of the river to see them cross, and when they came out of the water commenced shouting to frighten them, continuing their noise for about twenty minutes. Seeing at length, however, that the beasts submitted to be led quietly along the beach, they came near the camp, and we made them a present of a few fish-hooks. They returned to their camp before sunset.

The river we crossed this day was not so deep as either of the former ones. There is, apparently, a sandbank across all the rivers emptying themselves into Rockingham Bay, near the mouth, and this one formed no exception to the rule. The tide runs up very strongly—I should think for a mile and a-half or two miles.

There is a mangrove swamp running up some distance on the northern side of the river, till it joins the fresh water swamps. There is not so much fresh water running out of this river as from the last, and fresh water is only procurable from its south side near the swamp—it being impossible to penetrate the scrub on the northern side to obtain it. At low water the river is very shallow, with a muddy bottom.

June 13*th*.—On our mustering this morning, Carpenter was missed from the camp. It was discovered that he had absconded during the night, carrying off with him a damper weighing about

eleven pounds, two pounds of tea, and ten pounds of sugar. We had breakfast as quickly as possible, and Mr. Kennedy sent four men on horseback to scour the country around in search of him. They returned from an unsuccessful search, but had received intelligence from the blacks that he was not far off.

June 14*th*.—A party went out early this morning in search of Carpenter, and caught sight of him about two miles from the river, sharing his damper with the blacks. As soon, however, as he saw the party approaching, he decamped into the bush, and was again lost sight of. On coming up to the spot where he was seen, the bags in which he had carried away the tea and sugar were found; the sugar was nearly consumed, but the tea appeared untouched. In the evening Carpenter returned, and on begging Mr. Kennedy's pardon, he was forgiven. Throughout the expedition he was of very little service, being, in fact, little better than an idiot.

This evening we saw a large alligator, about twenty feet long, rising to the surface of the water, close to our camp. He appeared to be attentively watching our sheep, which were feeding by the side of the river on the *Dolichos* and *Ipomœas* which were growing on the sand. The natives here had a great many dogs, which, towards evening, rushed on our sheep and drove them among the bushes in all directions. We had great difficulty in getting them together before dark.

June 15*th.*—We proceeded inland two or three miles to the edge of the fresh water swamps, and camped there. Mr. Kennedy went with a party into the swamps to ascertain if it were possible to make a road for the carts to pass through. Wall and myself went out collecting specimens.

I found a beautiful species of *Loranthus*, growing on acacia trees, and producing on its long pendulous shoots abundance of beautiful scarlet flowers; the tube of the corolla was two inches long, with a very short limb, and the plant has lanceolate, glossy leaves. This most interesting parasite—covering the acacia trees—when in flower forms a most gorgeous sight, presenting a beautiful contrast to the dull foliage of the surrounding trees. I also found a scarlet passion-flower,* very beautiful, with three-lobed glaucous leaves; and a. *Nymphæa* (water lily), growing in the water holes and small creeks, producing large purple flowers, and peltate leaves; besides a number of other new and interesting plants. Mr. Wall succeeded in obtaining a specimen of a beautiful little marsupial animal, resembling an opossum in form, but not larger than the common rat, the colour pure white, with very small black spots.

Mr. Kennedy and party returned in the evening, after having been in the water up to their knees all day. He reported that it was altogether impossible to make a road.

June 16*th.*—Mr. Kennedy and party proceeded again this morning to enter the swamps, but in a

* *Disemma coccinea.*—See Vol. I. p. 92.

different direction, in the hope of finding some spot where a road might be made, but returned with no better success. This day we killed the best sheep we had yet slaughtered; it weighed 53 lbs., those we had previously killed varying from 40 to 48 lbs.; they did not keep fat, but up to this time we were enabled to fry all the meat, which mode of cookery was more speedy and convenient for us than boiling or any other way.

June 17*th.*—We proceeded this evening along the edge of the swamps, crossing several small creeks. In many places the wheels of the carts sank to the axle-trees in consequence of the rottenness of the ground near the creeks. At length we camped, after travelling about five miles.

June 18*th.*—This day was Sunday, and at eleven o'clock Mr. Kennedy assembled the whole party under the shade of some large trees and read prayers. This was a practice always persevered in when practicable, and unless for some very pressing reason, we uniformly set apart the Sabbath as a day of rest, such an interval from our toils being in fact absolutely necessary.

June 19*th.*—Again Mr. Kennedy started this morning, accompanied by five men, into the swamps, determined, if possible, to find a road by which we might cross them, and get to the foot of the mountain ranges on the south. He remained out during this and the two following days. The natives appear to be very numerous in the neighbourhood

of Rockingham Bay. There was an old camping place with twelve or fourteen old huts near our camp, but it was not visited by the natives during our stay there. They generally came to look at us every day, but always kept at a distance; on some days we saw as many as from eighty to a hundred. The women and children always kept farther from us than the men; I think more from fear of our dogs and horses than of ourselves. The weather was cool, with showers occasionally during the day, and at night steady rain set in.

June 20th.—The rain continued throughout the day.

June 21st and *22nd.*—The rain still continued. Two of our horses were found bogged in a creek near the camp, but were soon released without injury; they had strayed into the creek to eat the aquatic grass, which is plentiful on almost all the creeks between the swamps and the sea. The soil here was rather stiffer than we had found it before, being a light sandy loam, and in places clayey. There were not so many shells to be seen, and what there were, were principally bivalves.

Mr. Kennedy returned this evening, and having again found it impossible to cross the swamps, we were obliged to return to the beach, where the travelling was far better than among the trees. While travelling inland a man was always obliged to walk before the carts, to cut down small trees.

At this time we had only two meals per day;

breakfast at daylight, and dinner when we had completed our day's work, and camped. The time for dinner was therefore irregular, depending on the nature of the country over which we travelled. Some days we dined at one o'clock, on others not till dark. Whenever any birds were shot, they were boiled for supper; but as yet we had killed very few.

Mr. Kennedy appeared to be, in every respect, admirably fitted for the leader of an expedition of this character. Although he had innumerable difficulties and hardships to contend with, he always appeared cheerful, and in good spirits. In travelling through such a country as we were in, such a disposition was essential to the success of the expedition. He was always diverting the minds of his followers from the obstacles we daily encountered, and encouraging them to hope for better success; careful in all his observations and calculations, as to the position of his camp, and cautious not to plunge into difficulties, without personal observation of the country, to enable him to take the safest path. But having decided, he pursued his deliberate determination with steady perseverance, sharing in the labour of cutting through the scrub, and all the harassment attendant on travelling through such a wilderness, with as much (or greater) alacrity and zeal as any of his followers. It was often grievous to me to hear some of the party observe, after we had passed over some difficult

tract, "that a better road might have been found, a little to the right or to the left." Such observations were the more unjust and vexatious, as in all matters of difficulty and opinion, he would invariably listen to the advice of all, and if he thought it prudent, take it. For my own part, I can safely say, that I was always ready to obey his orders, and conform to his directions, confident as I then was of his abilities to lead us to the place of our destination as speedily as possible.

June 23rd.—We started early this morning, and proceeded along the beach till we came to a small river, which was narrow and shallow, but the bottom being muddy, and it being low water, we diverged towards the sea, where the sand was firmer, and there crossed it with little difficulty, without unloading the pack-horses or carts. The tide runs but a short distance up this river, and as far as the tide goes it is fringed with a belt of mangroves. The banks are muddy, and so soft that a man sinks up to his knees in walking along them. A little above the mangroves the river divides into several small creeks, in swampy ground, covered with small melaleucas so thickly, that although they are not at all bushy below, but have straight trunks of from three to five inches in diameter, and from ten to twenty feet high, a man can scarcely walk between them.

After crossing this river we again turned inland for a short distance, and camped by the side of a

small river south of the last; with steep grassy banks on the north side, overhung by *Tristanias* and arborescent *Callistemons*. On the south side grew mangroves, and the large blue-flowered *Ruellia* seen at our first camp. The tide ran up to our camp, the fresh water coming from the north-west. There were plenty of water-holes in the valley, between the river and the higher sandy ground. The grass here consisted principally of *Agrostis*, near the river, where the land is occasionally inundated, and of *Uniola*, a little further back, growing in tufts. On the sandy ridges, however, there was little else than *Xanthorhœa*, *Xerotes*, and *Restio* (rope grass). Here we saw a great many "native companions" (*Grus Antigone*), and swamp-pheasants (*Centropus phasianus*).

June 24th.— Mr. Kennedy and a party of five men again proceeded to examine the swamps, but returned without finding any practicable way of crossing.

June 25th.—We started early this morning, proceeding towards the beach in a southerly direction, the river turning again south by west, and camped after travelling over five or six miles of rotten and rather sandy ground.

June 26th.—We proceeded along the beach till we came to a small river, most probably the same we left yesterday, which we attempted to cross in the same manner as we had done the one on the 23rd, but unfortunately the horses and carts sank

so deeply into the mud that they were completely set fast. We were now obliged to unload, and carry the goods ashore. Some of the flour-bags fell into the water, but were quickly taken out—very little damaged. We had great difficulty in getting the carts out of the mud.

A number of natives had accompanied us all day, and pointed out to us the best place to cross the river. Some of them also assisted us in carrying our things across, while one or two attempted petty thefts. I caught one with two straps belonging to a saddle, and a pair of Mr. Kennedy's spurs in his basket, which I took from him and sent him away. Many of these natives were painted all over with a sort of red earth, but none of them had visited us armed with spears for several days past. Some of them had learned to address several of our party by name, and seemed pleased when they received an answer. We frequently made them small presents, and endeavoured to impress upon them the anxiety we felt to remain on friendly terms with them.

After having crossed the river we turned inland, cutting our way through a belt of mangrove scrub, about half a mile wide; we got the carts through with comparative ease, the ground being harder than usual. We camped on a rising ground, with good grass around us, by the side of a small creek running here almost parallel with the beach, and coming from the westward. At this camp I obtained seeds of a dwarf spreading tree, with alternate, exstipulate,

pinnate leaves, and axillary racemes of a round flattened fruit, similar in size and shape to the small blue fig cultivated in gardens, of a dark purple colour, and possessing a flavour similar to an Orleans plum when hardly ripe, with a hard rough stone inside.

June 27th.—We proceeded about five miles in a westerly direction, passing over two small creeks running to the south-east. The country here appeared to be gradually rising, and the land to be growing drier; and we now hoped to be enabled to prosecute our journey without any great obstruction from the swamps.

June 28th.—Proceeding on the same course as on the previous day, we crossed two small creeks, running rapidly to the eastward. The bottoms of these creeks were covered with granite pebbles, of various sizes. The first creek we crossed at the entrance, and the other near the middle of a thick scrub, extending nearly three miles, and through which we had to cut a road. The various plants of which this scrub was composed corresponded with those described as forming the scrub near our first camp in the Bay. The greatest obstacles to our progress through these scrubs were the long shoots of the *Flagellaria*, and climbing palm. We camped in an open patch of forest land, covered with grass, and the trees consisted principally of Moreton Bay ash (a species of eucalyptus), *Casuarina*, and a rather large growing *Acacia*, with broad, rhom-

boidal, sericeous phyllodia, and very broad, flat legumes.

Luff and Douglas were this day taken very ill with the ague.

June 29th.—We found that some of our horses had strayed into the scrub, and we did not succeed in finding them until nearly twelve o'clock, and Luff and Douglas being no better, Mr. Kennedy with three others proceeded to examine the country in advance of us.

June 30th.—This morning Luff was a little better, but Douglas was able to eat but little. In the scrub near our camp I found a species of *Musa*, with leaves as large, and the plants as high, as the common banana (*M. paradisiaca*), with blossoms and fruit—but the fruit was not eatable. I also found a beautiful tree belonging to the natural order *Myrtaceæ*, producing, on the trunk and large branches only, abundance of white, sweet-scented flowers, larger than those of the common rose apple (*Jambosa vulgaris*), with long stamens, a very short style, slightly two-cleft stigma, five very small semi-orbicular petals, alternate with the thick fleshy segments of the calyx, broad lanceolate leaves, the fruit four to six inches in circumference, consisting of a white fleshy, slightly acid substance, with one large round seed (perhaps sometimes more), the foot-stalk about one inch long. This is a most beautiful and curious tree. Some specimens which I saw measured five feet in circumference, and were sixty

feet high, the straight trunks rising twenty or thirty feet from the ground to the branches, being covered with blossoms, with which not a leaf mingled. There were ripe and unripe fruit mingled with the blossoms, the scent of the latter being delightful, spreading perfume over a great distance around; I had frequently noticed the fragrance of these blossoms while passing through the scrub, but could not before make out from whence it arose. It resembles the scent of a ripe pine-apple, but is much more powerful. There are not many of these trees to be found, and those only in the scrub, in a stiff loamy soil. The small animals eat the fruit, and I tasted some, but it was not so good as the rose-apple; we called it the white-apple. It is a species of *Eugenia*.

A short distance to the south-west of our camp, is a range of round hills, of moderate height, covered with grass, and thinly timbered with box and other species of eucalyptus, resembling the iron-bark. These hills are composed of huge blocks of coarse granite, with a stiff soil, and appear to stretch a long distance to the west.

July 1st.—Mr. Kennedy returned this morning, having explored the country for about forty miles, over which he thought we might travel safely. There being plenty of grass however at the camp, and the men no better, he determined to defer our advance till Monday.

July 2nd.—Being Sunday, prayers were read at eleven o'clock.

July 3rd.—Early this morning we prepared to start, but Luff and Douglas being seized with a fit of ague, we were compelled to stop. Although our horses had all the way had abundance of feed, they began to grow very thin—several of them very weak, and one getting very lame, from bad feet. The sheep also had fallen away very much, which I attributed to the wet journey they had had; being almost always wet, from crossing rivers and creeks.

July 4th.—Mr. Kennedy and three others roamed this morning to some distance from the camp, when they were followed by a tribe of natives, making threatening demonstrations, and armed with spears; one spear was actually thrown, when Mr. Kennedy, fearing for the safety of his party, ordered his men to fire upon them; four of the natives fell, but Mr. Kennedy could not ascertain whether more than one was killed, as the other three were immediately carried off into the scrub.

July 5th.—Luff and Douglas now began to get better, but being still unable to walk, we could not break up our camp.

July 6th.—We started early this morning, and crossed two creeks with narrow belts of scrub on each side, running north-east. I have little doubt these creeks run into the river we crossed on the 8th of June. The banks of the second creek were nearly twenty feet high, so that we were obliged to lower down the carts into its bed by means of ropes and pulleys, fastened to the branches of the trees

which overhung the creek. The horses were got into the creek with a great deal of difficulty, then harnessed to the carts, and we proceeded along the bed of the creek till we arrived at a spot where the banks on the opposite side were not so steep. At this place by harnessing six horses to each of the carts, we managed to get them all out of the creek without any accident. The bed of the creek was composed of granite pebbles. We encamped on the northern side of it, the soil being a strong clayey loam, well covered with grass two or three feet high, so thick that it was difficult to walk through it. The country here was hilly open forest-land, with a high range before us, running north-east. The trees were principally Moreton Bay ash, box, and another species of eucalyptus, resembling the common iron-bark, but with long narrow leaves. I also found a magnificent species of *Grevillea*, with fine pinnatifid silvery leaves, and beautiful racemes of orange-coloured flowers; also another tree belonging to the same natural order, rivalling the *Grevillea* in the beauty of its flowers, producing an abundance of cream-coloured blossoms, on compound, terminal racemes. In the scrub by the side of the creek, I found a most beautiful Scitamineous plant, the foliage, root, and habit of which resembled *Hedychium*. The beauty of the plant consisted in its large, stiff, shining *bracteæ*, which continue to grow after the small pink blossoms have fallen. The *bracteæ* are about half an inch broad at the

base, slightly curved inwards, and tapering to a point. The heads of the flowers, resembling a pine-apple in shape and size, and of a beautiful crimson colour, are produced on the top of a strong flower-stem, 18 inches high, and they will retain their shape and colour for a month after being cut. This plant appears to be very local in its habits, as I only caught sight of it by the side of three creeks, and always in moist, shady places. I obtained seeds, and also packed some of its fleshy, tuberous roots in a tin case.

We saw but few wallabies; and not one kangaroo or emu had as yet been seen by any of the party. The country was not open enough for them to inhabit.

July 7th.—We started at daylight, proceeding over open forest ground covered with long grass, very thick and luxuriant. Travelling was rendered still more difficult by the large logs of dead wood which strewed the ground in every direction, and which much impeded the progress of the carts. We camped by the side of a creek, with a narrow belt of scrub on the south-east side, but apparently a wide extent of it on the other. This creek had a large sandy bed; with large Castanospermums, Tristanias, and Sarcocephali, growing on its banks, which were rather steep. It had a very tortuous course, coming from the south-west and turning east a little below our camp, which was in a bend of the creek.

July 8th.—We were employed nearly all this day in cutting through very thick scrub on the other side of the creek. Whilst doing so we had to cross several other smaller ones, all turning east, and in the evening we camped on a small patch of open forest land, covered with long coarse grass, and large blocks of coarse granite rock jutting out here and there.

July 9th.—This being Sunday we halted for the day, and prayers were read at eleven o'clock.

July 10th and *11th.*—We continued throughout these days cutting through belts of scrub, and crossing small creeks, running from the west and north-west, and turning east. During the latter day we were visited by a small tribe of natives, who appeared very friendly and did not stop long. I found a large quantity of Castanospermum seeds in one of the creeks, apparently put there to steep by the natives, who use them for food. They informed me that they steep them in water for five days, and then cut them into thin slices and dry them in the sun; they are then pounded between two large stones, and the meal being moistened with water is baked on a flat stone, raised from the ground a few inches, with a small fire burning beneath. I afterwards saw some of the meal baked, but it was not very palatable.

July 12th and *13th.*—Our journey still continued through scrub, intersected by small creeks, which we had to cross, and by patches here and there of

open forest ground, covered with long grass, the soil a stiff loam. We were not able to make much progress, travelling on the average from three to five miles a day. We were compelled to cut away the scrub, and the banks of some of the creeks, before we were able to cross them, and were frequently obliged to run a creek up and down some distance before we could find a place where it was passable at all.

July 14*th*.—We started very early this morning, and commenced travelling over very uneven ground, full of small hillocks, and having the appearance of being frequently inundated, the grass growing very high and luxuriantly over it. Owing to the irregularities of the surface the axle-tree of one of our carts gave way this day. We were forced to leave the cart and harness behind, and load the horses with the spare pack-saddles we had brought with us, covering over the load of each horse with a piece of tarpaulin. We travelled on till dusk, when we arrived at a small creek, over-grown with grass, which we imagined we should cross with little difficulty; but the carts were set fast in the mud, and some of the horses got bogged. We were forced to carry the loading of our carts and saddle horses over on our shoulders, a task of no small difficulty and labour, the mud giving way up to the knee at every step. The horses were then safely taken across, and we lifted out the carts and carried them to the other side, finding that it was useless to

attempt to draw them out. It was ten o'clock at night before we had got the things over, and as soon as we had partaken of our late dinner we made a large fire to dry our clothes, which had become completely saturated by the labours of the day.

Mr. Kennedy arrived at the determination this day, to leave the carts behind at this camp, as they caused so much extra labour and delay in travelling.

July 16th.—Sunday, we halted, and had prayers read at eleven o'clock.

July 17th.—We got up early, and prepared all the loads ready for starting, but we were obliged to leave many things behind, that would have been very essential to the successful prosecution of all the objects of the expedition; my specimen box, a cross-cut saw, pickaxes, and various other articles which it was considered were too heavy to be carried on horseback. We, however, took good care that not an ounce of provisions of any description should be left behind. The sugar and tea were more compactly packed than heretofore, and the packages in which they had formerly been carried were left behind.

Near this camp a large swamp extended south-westward, but it was clear of scrub, containing nothing but Melaleucas of moderate size.

July 18th.—Having loaded the horses, we started at eight o'clock this morning, in good hope and high spirits, rejoicing to have got rid of one great impediment to our progress. The blacks regarded us with curious interest as we proceeded on our way,

forming a train of twenty-six horses, followed by the sheep, and Mitchell occasionally sounding a horn he had brought with him.

We all felt the inconvenience of leaving the carts behind, and I in particular. I was now obliged to make two strong bags to fit my specimen boards, and to hang them over a horse's back, one bag on each side, a very inconvenient method, as it rendered them liable to much damage going through the scrub. The sheep at this time had grown very thin and poor, not averaging more than thirty pounds when skinned and dressed; they had, however, become so habituated to following the horses that they cost us very little trouble in driving them.

After travelling about six miles through open forest land we camped near a creek on the skirts of a thick scrub.

July 19th.—We were cutting through scrub all day, skirting numerous small creeks which we met with here, most of them running to the eastward. The soil was rather stiff, and indicated a rocky formation, blocks of granite projecting from it in various directions.

July 20th, 21st, and *22nd.*—During these three days we travelled over an irregular, mountainous country, intersected by numerous creeks, running in every direction, but all of them with belts of scrub on each side. We sometimes crossed the same creeks two or three times a day, owing to the tortuous directions they took, and our clothes were kept wet

all the day; some of them too had very steep banks, which presented another obstacle to the progress of our horses. Between the creeks, small patches of open forest land intervened, with large blocks of rock scattered over them; most of the creeks had a rocky bottom, and were running to the eastward.

July 23rd.—Sunday,—we had prayers read as usual at eleven o'clock, and halted for the day.

July 24th.—We resumed our journey through the same description of country, cutting through scrub, and occasionally travelling through open land, timbered principally with Moreton Bay ash, box, and flooded-gum, and covered with very long grass. We crossed two creeks running to the northward, on the side of the last of which we camped. We were here compelled to shoot one of our horses, which had fallen lame. During the week we had made very little progress, being forced to turn in every direction to avoid the deep gulleys, and the scrub which invariably prevailed in the bends of the creeks. A tribe of natives visited us at this camp, and appeared very friendly; they did not stop with us long. I saw to-day several trees of the "white apple," as we called it, and which I have before described.

July 25th.—We entered the scrub on the side of the creek, and proceeded along its banks with difficulty, being obliged to cut our way through, but it grew less dense after we had skirted the creek a short distance. We found the creek to be the

branch of a river, which here divided—one branch running to the south-east (by which we had camped yesterday)—the other running east. It is rocky, and shallow where it divides, but grows deeper in its course towards the coast. It is about two hundred yards wide, and its banks are overhung with trees on each side. After following it about a mile up, it grew much more shallow and narrow, and had a rocky bottom.

On the opposite side were patches of open forest ground, but they did not extend to any distance. After skirting the river about three miles, we crossed it in a shallow place, the bed of it being composed of blocks of waterworn granite. The impediment offered by these blocks rendered it very difficult for our horses to pass, although the water was only from one to three feet deep. Several of the horses fell in crossing this river; the one carrying my specimens fell three times, and my specimens and seeds received much damage, if they were not entirely spoiled.

The river here runs from the north-west. We crossed it and entered the scrub, but not being able to get through it before dark, we tied our horses to trees, and slept by them all night.

July 27th.—We were cutting through scrub nearly all day, and having recrossed the river, cut our way to the top of a high hill, which we could not avoid. We found a patch of open ground on the hill, with grass for our horses and sheep. The

trees growing on the hill were casuarinas, and acacias, with a few box-trees. Here we camped and tethered our horses, for fear they should fall down the steep bank of the river. At the foot of the hill, on the opposite side of this river, the rocks were of great height, and almost perpendicular. The river runs through a range of hills coming from the eastward, joining a very high range, over which our journey now lay. This range is composed of a dark coloured granite, very hard; near the water was a vein of talc schist, running north-west and south-east. On the top of the hill we found large pebbles of quartz.

July 28th.—This morning, having loosed our horses from the tether, one of them fell down from the hill upon a ledge of hard rock at the edge of the river, a descent of thirty feet; he was so much injured by the fall that he died during the day. We came down the hill through the scrub towards the mountains, and camped but a short distance from where we rested the previous evening. We were now at the foot of the range.

July 29th.—Mr. Kennedy proceeded to explore the range, to ascertain the best spot to cross it, it being covered with thick scrub. It runs from the southward and turns eastward. I dug up a piece of ground here near the edge of the scrub, and sowed seeds of cabbage, turnip, rock and water melons, parsley, leek, pomegranate, cotton, and apple pips.

I here found a beautiful orchideous plant, with the habit of *Bletia Tankervilliæ*, flowering in the same manner, with flower-stems about three feet high, and from twelve to twenty flowers on each stem. The sepals were much larger than those of *Bletia*, and of a rich purple colour; the column yellow, with a spur at the base of the flower about three-fourths of an inch long. I packed some of its thick fleshy roots in a tin case. I also here obtained specimens of a beautiful *Hovea*, with long lanceolate leaves,—a much finer shrub than *H. Celsii*. Also a species of *Hibiscus*, with rough palmate leaves, large bright sulphur-coloured flowers, with a rich purple spot at the base of each petal, the stamens and stigma bright red, the blossoms when fully expanded eight inches in circumference; the plant has a very erect habit. Also another *Hibiscus*, with obcordate tomentose leaves, and pink flowers; both these last were very handsome shrubs. The trees on the open ground were casuarinas and flooded-gums, with a few *Balfourias*. Although we had a very difficult task before us—the ascent of the hills—our spirits did not fail us; but the horses began to look very poor and weak, although they had always had plenty of grass.

July 31*st*.—Early this morning Mr. Kennedy, Jackey, and four others left the camp, and began clearing a way up the mountain. They remained out the whole of the day.

Aug. 1*st*.—Mr. Kennedy and his party returned

to the camp, having determined on a route by which we should proceed up the mountain. Mr. Kennedy spoke very highly of Jackey, and thought him one of the best men of the party for cutting away scrub and choosing a path; he never seemed tired, and was very careful to avoid deep gullies.

Aug. 3rd.—We started early this morning, and proceeded up a spur of the range, in a north-westerly direction, but could not get so far as they had cleared. We managed to get twenty-three horses and their loads up to a flat place on the range, but, after several efforts, being unable to drive or lead the other horse up, we left him tied to a tree in the scrub. We found him all right the next morning, but as there was nothing but scrub before us, Mr. Kennedy thought it prudent to send the horses back to where there was grass and water for them, whilst some of the party cleared a path. After we had entered the scrub, we crossed a small creek, running rapidly, and which joined another running from the north-eastward, and which at their junction, form the river we had been camped at for the last few previous days.

The creeks ran over precipitous rocky falls, and it was Mr. Kennedy's opinion, that all the creeks we have met with on this side (coast side) the range, run into the swamps, and there spread, and gathering again, form into channels and run into Rockingham Bay. There is a large tract of land opposite Rockingham Bay which is occupied by swamps,

intersected by patches of open ground, and a few peaked hills. The swamps extend about forty-five miles, to about 145° 20′ east longitude. It seemed that a great deal of rain had fallen over this country, and it rained at intervals all the time we were in the vicinity of Rockingham Bay—from the 21st of May to the middle of August. It was Mr. Kennedy's opinion that the rainy season occurred very late this year. The whole peninsula seemed to fall from the east towards the west.

Aug. 4th.—Mitchell, Dunn, and myself, took the horses and sheep to grass and water, and having hobbled the former, we made ourselves a small hut with saplings, and covered it with a small tarpaulin. We divided the night watch into three parts, being four hours each.

Aug. 5th.—We mustered the horses morning and evening, and drove the sheep close to the fire, having one of our kangaroo dogs chained up beside them, and the other one with the sheep dog loose. We were apprehensive that the natives might attack us.

Aug. 6th.—Shortly after we had mustered the cattle this morning, seven or eight natives appeared at the edge of the scrub, in the direction from which we had come. Just as they approached, an Australian magpie perched upon a tree, and I shot it to shew the effect of our fire-arms. On hearing the report of the gun they all ran into the scrub, and we saw them no more. On all occasions it was Mr.

Kennedy's order—not to fire on the blacks, unless they molested us. I was anxious on this occasion not to let the natives know how few we were, and was glad to send them away in so quiet a manner. One of our sheep died this day, and as we had lost several before, and had but little to employ us, we opened it to see if we could ascertain the cause of its death. We found its entrails full of water. Our party was now divided into three bodies: Mr. Kennedy, Jackey, and four others, clearing a way up the mountain; Niblett and three others guarding the stores; whilst myself, Dunn, and Mitchell, had charge of the sheep and horses. It was necessary, therefore, for us to keep a good look-out, and two of us watched together.

Aug. 7th.—Early this morning a man came down to help us with the horses and sheep. We loaded our horses, with the exception of one, which was too weak, and too much bruised from falling, to travel. We turned him toward the open ground, and having packed our horses, went on till dark, when we tied our horses to a tree and lay down for the night beside them, although it rained all night. We had each of us a water can which held five pints, which we filled, and our two water kegs, at the foot of the range, fearing we might not find water in the journey over.

Aug. 8th.—At daylight we were afoot and breakfasted, and started immediately after. We travelled up the hills all day, but made very little

progress, owing to the great labour of clearing, and the numerous steep ascents we met with. We fortunately found water in a low place, and with difficulty lighted a fire, everything being saturated with rain. We then laid down and endeavoured to sleep, but were unable to do so from the number of small leeches which attacked us. I was obliged to get up several times in the night, and in the morning I found myself covered with blood.

Aug. 9th.—We started at daylight, although it was raining, and continued to do so all day; about six o'clock in the evening we reached a small river, running rapidly over rocks, and deep in some places. Its course was north-easterly, but it turned north, a little below where we first came upon it. We camped by the side of it, it being too late to cross, although there was open forest ground on the other side. The open ground on the coast side of the range was considerably lower than that on the other, the highest part of our track being, according to Mr. Kennedy's barometrical observations, upwards of two thousand feet above the level of the sea. The soil was a strong loam of a dark colour, owing to the admixture of a great deal of decomposed vegetable matter; rock projected in many places, and in those parts where the rocks were near the surface, *Callitris* (cypress pine) grew. In the deeper soil were large trees of the genera *Castanospermum*, *Lophostemon*, and *Cedrela*, mingled with *Achras Australis*, *Calamus* (climbing palm), *Seaforthia*,

Dicksonia, *Osmunda*, and large shrubs of *Alyxia*; several very interesting Orchideæ were also found in this place. We also discovered a great many snails, with large shells of a greyish colour. One I found on the bushes with an operculum,—this I gave to Wall.

Aug. 10*th.*—This morning we took the sheep and horses to a spot in the river where the current was not so strong, and drove them across. The sheep followed the horses like dogs. We then cut down three small straight trees, and made a bridge across a deep channel which ran between two rocks which projected out of the water, across which we carried the stores on our backs. All the things were got over before dark, after which we made a large fire to dry ourselves, having been wet to the waist all day. Niblett, who had been very unwell for three or four days, was taken much worse to-day. The position of our camp here was about 17° 48′ S. latitude, 145° 20′ E. longitude. We this day crossed the range, and prepared to commence our journey on the other side.

Aug. 11*th.*—We remained this day at the camp to give the horses a rest after their harassing journey over the range.

Aug. 12*th.*—Proceeding about five miles over uneven open forest ground, with isolated blocks of rock, we camped by a chain of rocky water-holes. The trees growing here were casuarina, box, apple-gum, and iron-bark.

Aug. 13*th.*—Sunday. Prayers as usual at eleven o'clock.

Aug. 14*th.*—Complaint was made to Mr. Kennedy of the waste and extravagant use of the flour and sugar by Niblett, who had the charge of the stores. Mr. Kennedy immediately proceeded to examine the remainder of the stores, when he found that Niblett had been making false returns of the stores issued weekly. Up to this time Mr. Kennedy, Niblett, and Douglas (who waited on Mr. Kennedy), had messed together, apart from the other ten. Niblett took charge of the ration for the smaller mess, and usually cooked it himself, the ration being taken out weekly from that weighed for the whole party. Besides issuing a larger ration to his own mess, Niblett had taken a great deal from the stores for himself.

On finding this out, Mr. Kennedy requested me to take charge of the stores, and issue them to the cook for the week, and from this date we all messed together. We had at this time about seven hundred lbs. of flour left. Everything was weighed in the presence of the whole party before I took charge, and I always weighed out every week's ration in the presence of the cook and two other parties. At this camp it was found necessary to reduce our ration to the following scale per week; fifty lbs. flour, twelve lbs. sugar, two and three-quarters lbs. tea, and the sheep as before—one every second day. After the ration was cooked, it was divided by the

cook at every meal. We this day burned our sheepfold to lighten our loads a little.

Aug. 15*th.*—We were cutting through scrub nearly all day, and crossed several small creeks running westward. This day the horse carrying my specimens had become so poor and weak that he fell five different times, and we were obliged to relieve him of his load, which was now placed on one of Mr. Kennedy's horses; but we soon found that even without a load he could not travel. We took off his saddle, bridle, and tether rope, and left him behind on a spot of good grass, where plenty of water was to be found.

The country here had a rugged and broken appearance; huge blocks of rock were lying on the open ground, sometimes one irregularly placed on the top of another, and of curious shapes. The hills as well as the valleys were generally covered with good grass, excepting in the scrub. On some of the hills the rocks were shivered into irregular pieces, and displayed crystals of quartz, small laminæ of mica, and occasionally hornblende. This evening we camped by the side of a fine casuarina creek, coming from the north-east. Immediately over our camp its waters ran over a very hard "trap-rock" of a black colour, the soil a stiff loam.

Aug. 16*th.*—We travelled on for the most part of this day over irregular, barren, stony ridges, and gullies, intersected by numerous small creeks, and abounding in rocky holes, all containing plenty of water.

Two more of our horses fell several times this day; one of them being very old, and so weak that we were obliged to lift him up. We now made up our minds for the first time, to make our horses, when too weak to travel, available for food; we therefore killed him, and took meat enough from his carcass to serve our party for two days, and by this means we saved a sheep. We boiled the heart, liver, and a piece of the meat to serve us for our breakfast next day. We camped in the evening in the midst of rocky, broken hills, covered with dwarf shrubs and stunted gum-trees; the soil in which they grew appearing more sandy than what we had yet passed on this side of the range. The shrubs here were *Dodonæa*, *Fabricia*, *Daviesia*, *Jacksonia*, and two or three dwarf species of acacia, one of which was very showy, about three feet high, with very small, oblong, sericeous phyllodia, and globular heads of bright yellow flowers, produced in great abundance on axillary fascicles; also a very fine leguminous shrub, bearing the habit and appearance of *Callistachys*, with fine terminal spikes of purple decandrous flowers, with two small bracteæ on the foot-stalk of each flower, and with stipulate, oval, lanceolate leaves, tomentose beneath, legumes small and flattened, three to six seeded, with an arillus as large as the seed; these were flowering from four to twelve feet high. There was plenty of grass in the valleys of the creeks. To the S.W. on the hills the grasses were *Restio*, *Xerotes*, and a spiny

grass which neither the horses nor the sheep would eat.

Aug. 17*th.*—This morning we commenced to prepare our breakfast of horse-flesh. I confess we did not feel much appetite for the repast, and some would not eat it at all; but our scruples soon gave way beneath the pangs of hunger, and at supper every man of the party ate heartily of it, and afterwards each one claimed his share of the mess with great avidity. The country to the north and north-west—the course we intended to pursue—looking very rugged and broken, we were discouraged from proceeding further this day, as the weak state of our horses prevented us from making almost any progress. We therefore camped by the side of a small rocky creek, winding through the mountains in all directions.

Aug. 18*th.*—Shortly after starting this morning we crossed a creek, running south-west, with a few arborescent *Callistemons* growing out of the rocks here and there. The horse which Mr. Wall had been riding had grown so weak that it was unable to travel, even with nothing to carry but the saddle. As we were passing along the side of a hill, he fell and rolled down into a gully. Being quite a young horse we thought he might regain strength, and did not like to kill him, so we left him and proceeded to find a good place for camping, which we did after travelling about four miles in the north-west direction, by the side of a fine river, with steep reedy

banks, lined with large casuarinas and flooded-gum trees, and abundance of grass growing in the valley of the river. At this camp the feet of our horses were all carefully examined by Costigan, who was a blacksmith: it was also his duty to mark the number of each of our camps on some adjacent tree.

Aug. 19th.—Wall rode back to see if he could bring up the horse we had left behind, but on reaching the spot found him dead; one of our kangaroo dogs had also stopped behind by the horse, being unable to follow us to the camp. We had the good luck to succeed in catching several fish in the river, and, what was better, shot a fine wallaby, which saved us another sheep. We had all along been particularly unfortunate in getting any thing from the bush to add to our mess, not having been able either to shoot or catch any thing for some time past except a few pigeons and two or three brown hawks.

The river by which we were camped was running west by south: below our camp it was not nearly so wide as at the spot where we came upon it. Where it turned through the hills its banks were rocky and steep, and the bed narrow, but running rapidly. The hills here, as well as the valley of the river, were well covered with grass. The position of the camp was in about 17° 30′ south latitude, and 145° 12′ east longitude.

Aug. 20th, 21st, 22nd.—During the whole of

these three days we travelled over undulating open land, wooded pretty thickly with stringy-bark, box, and apple-gum, interspersed with occasional sandy flats, producing a broad-leafed *Melaleuca*, and a pretty species of *Grevillea*, with pinnatifid, silvery leaves. Neither the *Melaleuca* nor the *Grevillea* grew more than twenty feet high. On the flats we found a great number of ant-hills, remarkable for their height and size; they were of various forms, chiefly conical, and some of them rose ten feet high. From the appearance of the ant-hills I should take the sub-soil to be a reddish clay.

Aug. 23rd.—We camped by the side of a creek running to the westward, with rather a broad bed, and steep banks of strong clay. There was no water in the creeks except in holes.

A tribe of natives, from eighteen to twenty in number, were seen coming down the creek, each carrying a large bundle of spears. Three of our party left the camp and went towards them, carrying in their hands green boughs, and making signs to the blacks to lay down their spears and come to us. After making signals to them for some minutes, three or four of them laid down their spears and approached us. I went back to the camp and fetched a few fish-hooks, and a tin plate marked with Mr. Kennedy's initials; having presented them with these they went away and appeared quite friendly. Shortly after we had camped, Goddard and Jackey went out for the purpose of

shooting wallabies; they parted company at the base of a hill, intending to go round and meet on the other side, but, missing each other, Jackey returned to the camp without his companion. To our great alarm Goddard did not return all night, although we kept up a good fire as a beacon to shew him where we were camped, and fired a pistol every five minutes during the night.

Aug. 24th.—Three of our party, accompanied by Jackey, rode to the spot where the latter had left Goddard on the previous day, intending, if possible, to track him, and succeeded in doing so for some distance to the eastward, but then coming to some stony ground, they lost the track.

They returned in about six hours, hoping to find him at the camp, but were disappointed. We now began to fear that our companion was lost, and poor Jackey displayed great uneasiness, fearing that he might be blamed for leaving him, and repeatedly saying that he did not wish Goddard to leave the camp at all, and that he had waited for him some time on the opposite side of the hill, where they were to meet. Four fresh horses were saddled, and Jackey, with Mr. Kennedy, Wall, and Mitchell, were just on the point of starting to renew the search, when to our great joy we observed him at a distance, approaching the camp. It would have been sadly discouraging to the whole party to have lost one of our companions in so wild and desolate a spot. We made but a short stage to-day in a

northerly direction, and camped by the side of a creek running west by south, which, with the last two creeks we had passed, we doubted not, from the appearance of the country, ran into the river we had crossed on the 20th inst. The country appeared to fall considerably to the westward. All the rivers and large creeks we had seen on this side the range (that crossed on the 10th instant) rose in or near the coast range, and appeared to run westerly across the peninsula into the Gulf of Carpentaria.

Although few of them appeared to be constantly running, yet there is an abundance of water to be found in holes and reaches of the rivers and creeks. Where there was any scrub by the side of the creeks, it was composed principally of the climbing palm (calamus), *Glyceria*, *Kennedya*, *Mucuna*, and a strong growing *Ipomœa*, with herbaceo-fibrous roots, and palmate leaves; and in a few places bamboos were growing.

The trees were, *Eugenias*, *Terminalias*, *Castanospermums*, with two or three kinds of deciduous figs, bearing large bunches of yellowish fruit on the trunks. Although we frequently partook of these figs I found they did not agree with us; three or four of the party who frequently ate a great quantity, although advised not to do so, suffered severely from pain in the head and swelling of the eyes. The forest trees on the iron-stone ridges were stringy-bark, and on the grassy hills, box, Moreton

Bay ash, and a tree belonging to the natural order *Leguminosæ*, with axillary racemes of white apetalous flowers, long, broad, flat, many seeded legumes, large, bipinnate leaves, leaflets oval, one inch long, —and having dark fissured bark; on the flat stiff soil grew iron-bark, apple-tree, and another species of *Angophora*, with long lanceolate leaves, seed vessels as large as the egg of a common fowl, and a smooth yellow bark.

Aug. 27th.—This day being Sunday we had prayers at eleven o'clock. We saved the blood of the sheep we had killed for to-day's food, and having cut up the heart, liver, and kidneys, we mixed it all with a little flour and boiled it for breakfast. By this means we made some small saving, and it was a dish that we were very fond of. We saved all the wool that we could get from our sheep, for the purpose of stuffing our saddles, a process which was frequently required, owing to the poor condition of our horses.

Aug. 28th.—We started early this morning, but had not travelled far when one of our horses fell from weakness; we placed him on his legs four times during the day, but finding the poor animal could not walk, we shot him and took sufficient meat from him with us to last for two days. After making but a short stage, over iron-stone ridges, covered with stringy-bark, and loamy flats, producing *Melaleucas* and *Grevilleas*, we camped beside a small creek, in the sandy bed of which there was no

water, but from which we soon obtained some by digging a hole about two feet deep. We afterwards found there was plenty of water in the creek higher up to the eastward.

Aug. 29th.—We were obliged to leave another horse behind us this morning as he was quite unable to travel. We camped by the sandy bed of a very broad river, with water only in reaches and holes. There is, however, evidently a great deal of water running here occasionally, as the bed of the river was six or seven hundred yards wide, with two or three channels. The flood marks on the trees were fifteen feet high; it has a north-easterly course; its bed was composed in places of large blocks of granite and trap rock, which was very difficult to walk upon, being very slippery. Fine melaleucas were growing on each side, which with their long pendulous shoots, and narrow silvery leaves, afforded a fine shade from the heat of the sun. There was plenty both of grass and water for the horses, but most of them continued to grow weaker.

Aug. 30th and *31st.*—The country was very mountainous, and so full of deep gullies, that we were frequently obliged to follow the course of a rocky creek, the turnings of which were very intricate; to add to our difficulties, many of the hills were covered with scrub so thickly that it was with much difficulty that we could pursue our course through it. We had intended to have kept

along the bank of the river, thinking it might lead us to Princess Charlotte's Bay, and although unable to do so, we did not as yet lose sight of the river altogether.

Sept. 1*st.*—All this day we continued travelling over very uneven country, full of precipitous rocks and gullies, until we came to a bend of the river: we now followed it in its tortuous course through the rocks, till we came to a flat country where its channels were divided by high green banks, on which were growing large drooping tea-trees (melaleucas); growing on these I found a beautiful species of *Loranthus*, with large fascicles of orange-coloured flowers, the leaves cordate, and clasping the stem. On the hills I found a *Brachychiton*, with crimson flowers; the tree had a stunted growth, with deciduous leaves. I collected as much of the gum as I could, and advised the others to do the same; we ate it with the roasted seeds, but were unable to find much of the gum or of the seeds.

Sept. 2*nd.*—We travelled over uneven rocky ground, and crossed several gullies, and camped by the bed of a river, at a spot where there were fine reaches of water, full of *Nymphæa* and *Villarsia*. There was plenty of good grass in the valley of the river, which was not very wide here, but on the hills many parts had been recently burned, and the grass was just springing up.

Sept. 3*rd.*—Sunday. We had prayers at eleven o'clock, and afterwards, during the day, we shot

a small emu and a kangaroo. Being camped by the side of the river, we were able to catch a few fish, which were a most acceptable change to us.

The country through which we had passed for the last two days consisted of a good stiff soil, well covered with grass, openly timbered and well watered.

Sept. 4th and *5th.* — The country continued much the same, making travelling most difficult and laborious. We were now in the vicinity of Cape Tribulation. While traversing the bed of the river, in which we were in many places obliged to travel, we passed two very high peaked hills to the westward.

Sept. 6th.— We now found the river beginning to run in all directions through the hills, over which it was impossible to travel. We were consequently forced to keep in the bed of the river, our horses falling every few minutes, in consequence of the slippery surface of the rocks over which they were obliged to pass—consisting of dark granite.

The sterility of the hills here is much relieved by the bunches of beautiful large yellow flowers of the *Cochlospermum Gossypium*, interspersed with the large balls of white cotton, just bursting from the seed-vessels. I collected a bag full of this cotton, wherewith to stuff our pack-saddles, as our sheep did not supply us with wool enough for that purpose. On these hills, too, I saw a beautiful *Calythrix*, with pink flowers, and two or three very

pretty dwarf acacias. As Mr. Kennedy and myself were walking first of the party, looking out for the best path for the horses to travel in, I fell with violence, and unfortunately broke Mr. Kennedy's mountain barometer, which I carried. I also bruised one of my fingers very much, by crushing it with my gun.

Sept. 7th and *8th.*—We continued following the river during its westward course, through a very mountainous country. On the hills I saw a very handsome *Bauhinia*, a tree about twenty feet high, with spreading branches covered with axillary fascicles of red flowers, long broad flat legumes, pinnate leaves, leaflets oval, about one inch long; an *Erythrina*, with fine racemes of orange-coloured flowers, with long narrow keel, and broad vexillum, leaves palmate, and three to five lunate leaflets, long, round, painted legumes, red seeds; also a rose-coloured *Brachychiton*, with rather small flowers, a deciduous tree of stunted habit, about twenty feet high. We also passed narrow belts of low sandy loam, covered with *Banksias*, broad-leafed *Melaleucas*, and the orange-coloured *Grevillea* I have before spoken of. On these flats we again met with large ant-hills, six to ten feet high, and eight feet in circumference; the land at the base was of a reddish colour.

Sept. 9th.—We had a fine view of the surrounding country from the top of a high hill, in the midst of a range over which we passed. To the west and round to the south the country appeared to be fine

undulating forest land, intersected by numerous creeks and small rivers falling considerably to the westward, as in fact all the water had been running for some days past. Doubtless there must be plenty of water in the holes and reaches of these rivers and creeks at all seasons, but in the rainy season many of them must be deep and rapid streams, as the flood marks on the trees were from fifteen to twenty feet high. The river along the course of which we had been so long travelling varied in width from two hundred to eight hundred yards. It has two, or, in some places, three distinct channels, and in the flat country through which it passes these are divided by large drooping melaleucas.

It is singular that the country here should be so destitute of game; we had seen a few wallabies and some ducks, but were seldom able to shoot any of them; we had not seen more than four or five emus altogether since we started; a few brown hawks which we occasionally shot, were almost the only addition we were enabled to make to our small ration. To-day we got an iguana and two ducks, which, with the water in which our mutton was boiled, would have made us a good pot of soup, had there been any substance in the mutton. Even thin as it was, we were very glad to get it. The rivers also seemed to contain but few fish, as we only caught a few of two different kinds, one of which without scales, resembled the cat-fish caught near

Sydney;* the other was a dark thick fish with scales.

Sept. 10*th.*—Finding that the river continued running to the westward, and not as we had hoped towards Princess Charlotte's Bay, we left it and turned in a northerly direction, travelling over very rocky ridges covered with cochlospermums and acacias, interspersed with occasional patches of open forest land, and strewed with isolated blocks of coarse granite containing crystals of quartz and laminæ of white mica. Prayers as usual at eleven o'clock.

We had not seen natives for several days, but this night, whilst one of the party was keeping watch, a short distance from the fire, about eleven o'clock, he heard the chattering of the blacks. Three spears were almost immediately thrown into the camp and fell near the fire, but fortunately without injuring any of the party. We fired a few shots in the direction from which the spears came; the night being so dark that we could not see them. We entertained fears that some of our horses might be speared, as they were at some distance from the camp, but fortunately the blacks offered us no further molestation.

Sept. 11*th* and 12*th.*—We pursued our northern course, the ground becoming very rotten; by the sides of small creeks in sandy flats were belts of broad-leafed *Melaleucas* and *Grevilleas.* We met

* *Plotosus macrocephalus.*

with scrubs of *Leptospermum*, *Fabricia*, and *Dodonæa*. By the creeks, when the ground was sandy, we saw *Abrus precatorius*, and a small tree about fifteen feet high, with bi-pinnate leaves, the leaflets very small, with long flat legumes containing ten or twelve black and red seeds, like those of *Abrus precatorius*, but rather larger.

Sept. 13*th* and 14*th*.—Most part of these days we travelled over a country of stiff soil, covered with iron-bark, and divided at intervals by belts of sandy ground, on which grew *Banksias*, *Callitris*, and a very pretty *Lophostemon*, about twenty feet high, with long narrow lanceolate leaves, and a very round bushy top. By the side of the small streams running through the flat ground, I saw a curious herbaceous plant, with large pitchers at the end of the leaves, like those of the common pitcher-plant (*Nepenthes destillatoria*). It was too late in the season to find flowers, but the flower-stems were about eighteen inches high, and the pitchers would hold about a wine-glass full of water. This interesting and singular plant very much attracted the attention of all our party.

We here fell in with a camp of natives. Immediately on seeing us they ran away from their camp, leaving behind them some half-cooked food, consisting of the meal of some seeds, (most likely Moreton Bay chesnuts), which had been moistened, and laid in small irregular pieces on a flat stone with a small fire beneath it. We took a part of

this baked meal, leaving behind some fish hooks as payment. In the camp we also found a considerable quantity of Pandanus fruit, which grows very plentifully here. Although, however, it is sweet and pleasant to the taste, I found that the natives did not eat largely of it, as it possessed very relaxing qualities, and caused violent headache, with swelling beneath the eyes.

Some narrow belts of land we passed here betrayed indications of having been frequently inundated by fresh water. The ground was very uneven, full of small hillocks which were hidden by long grass, which caused our weak horses to fall very frequently.

Sept. 15*th.*—This day we had better travelling, the soil becoming a strong greyish loam; the forest land open and free from scrub, the trees principally consisting of iron-bark, box, and the leguminous tree, with bi-pinnate leaves, and dark fissured bark I have before alluded to. We saw here a great many pigeons of various kinds; Mr. Wall shot one pair of *Geophaps plumifera*, which he preserved; also a pair of small pigeons of a greyish colour, with red round the eyes, which he considered new. I also saw a large tree and obtained specimens of it, belonging to the natural order *Bignoniaceæ*, with terminal spikes of yellow flowers, and rough cordate leaves; and a Proteaceous plant with long compound racemes of white flowers, and deeply cut leaves, resembling a tree with true pinnate leaves. The

large seeded *Angophora* mentioned by me before, also grew in this district.

About ten o'clock we came upon the banks of a very fine river, with a very broad bed, and steep banks on both sides. No doubt this was the river we had seen to the eastward from our camp on the 9th instant. Mr. Kennedy considered this stream to rise somewhere near Cape Tribulation, and after running northward about thirty miles, to turn to the south-west, the way it was running when we came upon it. In this place it appeared a fine deep river, and we followed it in its south-west course, at a short distance from its banks, for six or seven miles. The south-east bank was, for the last three or four miles we traced it, covered with a narrow belt of scrub, composed of *Flagellaria*, *Jasminum*, *Phyllanthus*, and a rambling plant, belonging to the natural order *Verbenaceæ*, with terminal spikes of white, sweet-scented flowers. The trees were principally *Castanospermum*, *Melia*, *Rulingia*, and *Sarcocephalus*, and a beautiful tree belonging to the natural order *Bombaceæ*, probably to the genus *Eriodendron*, with large spreading branches, which, as well as the trunk, were covered with spines. These trees are from thirty to fifty feet in height, and produce large crimson campanulate flowers, composed of five large stiff petals, about two inches long; stamens numerous, all joining at the base, and divided again into five parcels; the filaments are the same length as the petals; five cleft stigma;

large five-celled capsule, many seeded cells, the seeds being wrapped in a white silky cotton. This tree was deciduous, the leaves being palmate, and grew on stiff soil: its large crimson flowers attracted universal admiration.

We crossed the river at a spot where its banks were not so steep, and where there was but from one to three feet of water; in some places the bottom was sandy and in others rocky, but we could see rock only in the bed of the river. We camped on the side of the river, on some recently burned grass; five of the party went fishing a short distance up the river, and caught a few fish. The country here to the west and the south-west was open undulating forest land, which had been burned some short time before, and the grass just growing again, formed beautiful feed for our horses and sheep.

Towards evening about six or eight natives made their appearance, on the same side of the river as our camp; when about two hundred yards from us they shipped their spears in their throwing-sticks, and with other warlike gestures gradually drew near to us, making a great noise, doubtless thinking to frighten us. There being a wide deep gully between the natives and our camp, we drew up along the edge of it, with our fire-arms all ready to give them a warm reception should they endeavour to approach to closer hostilities. We endeavoured to make them understand that our intentions were friendly, and that we wished them to be peaceable;

but they seemed to construe our signals to make them comprehend this, into indications of fear on our part; this increased their courage, and strengthened their determination to drive us away if possible, although they would not come within reach of our guns. We however fired at them, and although none were hurt, they appeared much frightened at the report of the fire-arms. They left us and went in the direction taken by the five of our party who had gone fishing, and for the safety of whom we began to be alarmed; our fears were increased, by hearing the report of a gun a few minutes afterwards. It seemed they had seen our party fishing by the side of the river, and instantly ran at them, to attack them; but one of the party placed on the bank as a look-out, fired at them as they came up, just as they were preparing to throw their spears, on which they turned their backs, and took to flight as fast as they could.

Sept. 16*th.* — This morning after breakfast, Mitchell and myself took two horses and re-crossed the river. We went about two miles back to a spot where I had seen some *Portulaca*, intending to bring some of it back to the camp to boil as a vegetable, it being the only description of food of the kind that we had been able to obtain throughout our journey. We filled a bag with it and returned to the camp, when I found half a damper, one meal's bread, had been stolen from the stores during my absence. This was not the first theft of the kind that had

been committed, and it was found necessary to watch the provisions night and day. Mr. Kennedy was anxious to discover the thief in this instance, as it was stolen in open daylight while Mr. Kennedy himself was keeping a look-out in his tent, not twenty yards from where the provisions were stolen; every man's load was searched, but in vain, and Mr. Kennedy, knowing that a party left the camp for the purpose of fishing a short distance up the river, and another party a few yards down the river to wash some clothes—took Jackey with him, who, by detecting some crumbs on the ground, discovered that the damper had been eaten at the place where the clothes were washed.

So careless were some of the party of the fatal consequences of our provisions being consumed before we arrived at Cape York, that as soon as we camped and the horses were unpacked, it was necessary that all the provisions should be deposited together on a tarpaulin, and that I should be near them by day and by night, so that I could not leave the camp at all, unless Mr. Kennedy and Mr. Wall undertook to watch the stores. I was obliged to watch the food whilst cooking; it was taken out of the boiler in the presence of myself and two or three others, and placed in the stores till morning.

It was seldom that I could go to bed before nine or ten o'clock at night, and I had to be up at four in the morning to see our tea made and sweetened, and our breakfast served out by daylight. The

meals we cut up into thirteen parts, as nearly equal as possible, and one person touched each part in succession, whilst another person, with his back turned, called out the names of the party, the person named taking the part touched. The scrupulous exactness we were obliged to practise with respect to our provisions was increased by our misfortune in getting next to nothing to assist our scanty ration; while the extreme labour to which we were subjected increased our appetites. Two of the party always went out at daylight to fetch the horses in, and it was necessary we should start at early morning on account of the great heat in the middle of the day. We always endeavoured to make a fair stage by ten o'clock, and then, if in a convenient place, to halt: sometimes we were obliged to halt at nine o'clock, but we started again generally about three or four o'clock P.M., and travelled on till six.

Twelve or fourteen natives made their appearance at the camp this evening, from the same direction as on the previous day. Each one was armed with a large bundle of spears, and with boomerangs. Their bodies were painted with a yellowish earth, which, with their warlike gestures, made them look very ferocious. The grass in the position they had taken up was very long and very dry, quite up to the edge of the gully; they set it on fire in three or four places, and the wind blowing from them to us, it burned very rapidly. Thinking we should be frightened at this display they followed the fire

with their spears shipped, making a most hideous noise, and with the most savage gestures. Knowing the fire could not reach us, as there was nothing to burn on our side the gully, we drew up towards them with our fire-arms prepared. They approached near enough to throw three spears into our camp, one of which went quite through one of our tents. No one was hurt, but a few of our party fired at them; we could not tell whether any were wounded, as they disappeared almost immediately. We kept three on watch this night for fear of the natives.

Sept. 17*th* to 21*st.*—Leaving the river, we turned north-west, and had occasionally fair travelling over stiff soil, intersected by many creeks, most of them dry, but were every where able to find water at intervals of a few miles. We passed over some ironstone ridges, and rocky hills, covered with *Callitris*, *Cochlospermum*, and *Sterculias*. On the stiff soil the trees were iron-bark, box, apple-gum, and some large acacias, with long lanceolate phyllodia, and large spikes of golden-coloured flowers. The grass here in the valleys between the hills had been burned, and was grown up again about eight or ten inches high.

Sept. 22*nd.*—We crossed a creek running eastward, overhung by melaleucas and arborescent callistemons, with plenty of grass on both sides; the soil appeared to become more sandy than that over which we had hitherto passed.

Sept. 23*rd.*—We proceeded on our course, tra-

velling over sandy ridges covered with *Eugenia*, *Exocarpus*, and a very pretty *Eucalyptus*, with rose-coloured flowers and obcordate leaves, and yellow soft bark; also a dwarfish tree with dark green leaves, and axillary racemes of round monospermous, fruit of a purple colour, with a thin rind of a bitter flavour; also a great many trees of moderate size, from fifteen to twenty feet high, of rather pendulous habit, oval lanceolate exstipulate leaves, loaded with an oblong yellow fruit, having a rough stone inside; the part covering the stone has, when ripe, a mealy appearance, and very good flavour. I considered from its appearance it was the fruit which Leichhardt called the "nonda," which we always afterwards called it; we all ate plentifully of it.

The weather for the last few days had been very hot, the thermometer ranging in the shade from 95° to 100° at noon; still there was generally a breeze in the morning from the eastward, and in the evening from the west. We camped by the same creek as on the previous day, but in our present position it was running S.W. with several lagoons in the valley, full of *Nymphæa* and *Villarsia*; our latitude here was 15° 33′ south.

Sept. 24th.—We crossed the creek and proceeded northward, till we camped by a dry creek, from the bed of which we obtained water by digging. During the day's journey, we passed over some flats of rotten honeycomb ground, on which nothing was

growing but a few stunted shrubs, and a blue herbaceous plant belonging to the order *Boragineæ*. We also passed over other sandy flats covered with broad-leafed Melaleucas and Grevillias, and a few Banksias. On these flats ant-hills occurred, and in their vicinity there was seldom much grass. The grasses generally growing there were annual kinds. It was Mr. Kennedy's opinion that the creek we crossed this morning joined the river we left on the 16th, and formed the Mitchell, although the country hereabouts did not resemble the banks of the Mitchell, as described by Leichhardt; but the appearance of the country varies so much every few miles, particularly to the westward, that it is impossible to support an opposite opinion on this ground.

Sept. 25th.—As three of the horses could not be found this morning, four men were left behind to search for them while the rest of the party travelled on. They had not come up with us at about four o'clock, and being anxious to find water before dark, we proceeded along a narrow open valley covered with long grass and large pandanus trees, skirted on each side by rather scrubby forest land. At dark we reached a large water hole. One of the men left behind shortly arrived, and stated that the rest had halted for the night. Mr. Kennedy being anxious to bring all the horses to water, and to have the party together, sent me back to conduct them to the camp, which I very soon did, even though it

was dark, the track being very plain. We collected a great many nondas to-day and baked some of them with our bread, which was the only way we could eat them cooked; they were much better fresh from the trees, but we found them rather astringent. Spring, our best kangaroo dog, was unable to come up to the camp this day, being overpowered by the heat of the sun, a circumstance we all regretted, as he was a most excellent watch dog.

Sept. 26th.—We travelled a good stage this morning before we found water,—in a sandy creek, where the country seemed to fall slightly to the north-east. We still hoped to find a river running into Princess Charlotte's Bay.

Sept. 27th.—We proceeded N.E. over alternating sandy ridges and marshy flats; the latter, though dry where we passed over them, presented the appearance of being generally inundated. We camped by the side of a rocky creek, containing very little water.

Sept. 28th.—Just as we were about to start this morning, two natives, carrying a bundle of reeds and a basket, passed within a short distance of our camp, and seemed to take no notice of us. Our sheep were not to be found, having rambled to a distance; although without a sheepfold, this was the first instance in which the sheep had strayed; they generally remained by the fire, towards which they were driven at night, till morning.

We had never seen a wild native dog during the journey. Our dog that we had left behind came into the camp to-night, very much exhausted, having travelled about thirty miles; he must have subsisted on nondas, as it was impossible he could have caught anything, and we had seen him eat them before. He died the following morning.

Sept. 30th.—After travelling a short distance we crossed a small river running eastward: for some distance down it, the water was brackish, and at spring tide the salt water came up to our camp; but we obtained good water from a small lagoon near the camp. We proceeded over a large plain well covered with good grass, the soil stiff clay. We proceeded about five or six miles on this plain, turning westward towards a lagoon surrounded by *Stravadiums* and a few very large palms. We hoped to find water in it, but it was dry, and fearing we should not be able to reach water before dark if we proceeded in this direction, we thought it better to return to our camp.

Oct. 1st.—We had prayers this day as usual on Sundays, at eleven o'clock. We saw native fires at a distance to the north-east of our camp, but the natives did not come near us. I went up what we fancied was the river by which we had camped, but found it only a creek; but it had plenty of water in it at this season. There were several small lagoons near it. There were large drooping tea-trees (Melaleucas) growing on its banks, and large palm

trees, of the same kind as those I had seen in the plain the day before, and which were by far the finest palms I had ever seen; the trunks were not very high, from fifteen to thirty feet in height, but very large in bulk, varying from six to eight feet in circumference; they had large fan-shaped leaves, with slightly curved spines on the footstalk. It is a diœcious palm, the female plants bearing an immense quantity of round fruit, about the size of a greengage plum, of a purple colour, and rather disagreeable flavour; the pulp covering the seed was very oily, and not a leaf to be seen on any of the fruit-bearing plants; the whole top consists of branches full of ripe and unripe seeds. Bushels of seeds were lying beneath some of the trees, it seeming that but few were eaten by birds or small animals. One of our party suffered severely from eating too freely of them, as they brought on diarrhœa. I measured two or three of the leaves of the male plants, and those not of the largest size, and found them to measure six feet in the widest part, and four feet and half in the narrowest. These leaves were split by the wind into segments of various widths. The grass growing to the westward of our camp was not so high as that to the eastward, and appeared to consist of a larger proportion of annual grasses, the perennial grass growing only in tufts; near the river it was covered with an annual *Ipomœa*, of very strong growth,—the leaves and blossoms were withered, but I ob-

tained seeds. We shot three ducks to-day, and Wall killed a wallaby of a light grey colour, long soft fur, and rather bushy tail; he thought it new, and preserved the skin. I also obtained specimens of a beautiful plant, a shrub about two feet high, with white sweet-scented blossoms, belonging to the natural order *Rubiaceæ*, and several other interesting plants. Lately, however, my specimens had been very much spoiled,—being torn from the horse's back so frequently, that I grew disheartened to see all the efforts I had made, made in vain, although I still took every method to preserve them from injury.

Oct. 2nd.—This morning we proceeded across the plain, and when we had advanced about two miles upon it, we discovered that the natives had set the grass on fire behind us, and the wind blowing from the eastward, and the grass growing thick and high, it rapidly gained upon us; we made all possible haste to some burned ground which we had seen on Saturday, and reached it only a few minutes before the fire. We were enveloped in smoke and ashes, but fortunately no one was burned. The natives did not come near us, although no doubt they watched us, and saw us proceeding to the part of the plain that was burned. The plain extended a great distance to the westward, and in crossing it one of our horses knocked up and could travel no longer; Mr. Kennedy ordered him to be bled, and we not liking to lose the blood, boiled it as a blood-

pudding with a little flour, and in the situation we were, we enjoyed it very much.

Oct. 3rd.—We killed the horse this morning as he was not able to stand, and dried the meat to carry with us; we made a small stage of saplings on which to dry the meat, which was cut off close to the bone as clean as possible, and then cut in thin slices, and laid on the stage in the sun to dry, and the sun being very hot, it dried well; the heart, liver, and kidneys were parboiled, and cut up fine, and mixed with the blood of the horse and about three pounds of flour; they made four puddings, with which, after they had boiled about four hours, we satisfied our appetites better than we had been able to do for some time: it was served up in the same manner as our usual rations, in equal parts, and each man had a right to reserve a portion of his mess till the next day—but very little was saved. Mr. Kennedy found that it was even necessary to have the horse flesh watched whilst drying, finding that two or three of the party had secreted small quantities amongst their clothes; such precautions were quite necessary,- as well in justice to the whole of the party, as to keep up the strength of all, which seemed to be very fast declining. At night we made a fire to smoke the meat, and to destroy the maggots, which were very numerous in it; we packed the meat in empty flour bags.

Oct. 4th.—We proceeded northward over small sandy plains, covered with annual grass, which was

now very much withered, and through belts of dwarf bushy Melaleucas and Banksias. We were not far from Princess Charlotte's Bay, Jane's Table Land being in sight. We came to the side of a salt lagoon, very nearly dry; we found it covered with salt, of which we took about 20 lbs., which was as much as we could carry, but even this was a very seasonable help; we rubbed about two pounds of it into our meat. We encamped by a small creek, but the water was brackish, and not being able to find any other we were obliged to make use of it. One of our horses was slightly hurt by the stump of a mangrove tree. All we got from the horse we last killed was sixty-five pounds of meat.

Oct. 5th and *6th.*—We travelled over sandy soil, but with little grass, meeting frequently with salt lagoons, surrounded by various salsolaceous plants. Near the edge of a salt water creek we found a native camp, composed of about seven or eight huts, curiously and neatly built of a conical form; all were nearly of the same size, about five and a half feet in diameter at the base, and six and a half feet high. They were made by placing saplings in the ground in a slanting position, which were tied together at the top and woven inside like wicker work, with strips of small bamboo canes. The whole was then covered with palm leaves, over which was a coating of tea-tree bark, very neatly fastened by strips of cane. They were substantially built, and would no doubt keep out the wet effec-

tually. They seemed to be occupied by the natives only in the rainy season, as, from their appearance, they had not been inhabited for some time. I entered one of them through a small arched opening of about twenty inches or two feet high, and found three or four nets, made with thin strips of cane, about five feet long, with an opening of about eight inches in diameter at one end, getting gradually smaller for about four feet, where there was a small opening into a large round sort of basket. These nets were laid by the natives in narrow channels to catch fish, as well as in the tracks of small animals, such as rats and bandicoots, for the purpose of trapping them. There were also some pieces of glass bottle in the hut, carefully wrapped in bark and placed in a very neat basket, made in the shape of a lady's reticule. The glass is used by the natives in marking themselves: all of them being scarred on the arms and breast, while some were marked on the cheeks and forehead.

In the camp we thus discovered were small stone ovens, similar to those we had found in the camp at Rockingham Bay, as well as one with a large flat stone raised six or eight inches from the ground, and a fire-place of loose stones beneath. Near to one of the tents was a large stone hollowed out in the middle, and two or three round pebbles for pounding dried seeds, &c.

Oct. 7th and *8th.*—Flat sandy ground, with occasional patches of scrub, composed of bushy

Melaleucas, *Hibiscus*, *Banksia*, and several rambling plants, with a few large palms scattered in places; there was not much grass, except at intervals.

Oct. 9th.—This morning we came to a river, running into Princess Charlotte's Bay, in lat. 14° 30′ S., long. 143° 56′. It was deep, and about 100 yards wide, the water salt, and the tide was flowing up fast, and the banks were high. A few scattered mangroves, and a leguminous tree, with rough cordate leaves, and large one or two-seeded legumes, were growing on the banks. We were obliged to turn southerly for a short distance, and found what we had fancied was a river to be only a small creek. We crossed it about twelve or fourteen miles from the sea, but the water was brackish. The trees on the sandy ground were broad-leafed melaleucas, Grevilleas, and nondas, and by the water-holes which we occasionally saw, were stravadiums and drooping melaleucas. I also saw a species of *Stravadium* with racemes of white flowers, much longer than the others, with leaves ten inches long by four inches broad, and the trees thirty feet high. Keeping at a distance from the sea-coast to avoid the salt water creeks, and to obtain good grass for our horses, we halted in the middle of the day, and were visited by a great many natives, coming in all directions, and making a great noise. They appeared to have been collecting nondas, as a great many of their women were carrying large basketfuls away. After the women were out of sight

they made signs to us to go away. We got our horses together, and endeavoured to make them friendly, but our entreaties were disregarded, and the presents we offered them were treated with contempt. When we found they would not allow us to come near them, we packed our horses and prepared to start. They followed us at some distance, continually throwing spears after us for some time; one was thrown into the thigh of a horse, but fortunately not being barbed it was taken out, and the horse was not much injured. We then rode after them in two or three directions and fired at them, when they left us, and we saw no more of them.

Oct. 11*th.*—To-day, when halting in a place where there was no water, but good grass, a tribe of natives made their appearance, and appeared disposed to be friendly. We carefully collected our horses, and shortly after the natives drew near to us. We made them presents of a few fish-hooks and tin plates, and made signs to them that we wanted water; several of them ran off, and in a few minutes returned with water in a vessel (if it may be so called), composed of pieces of bark tied together at each end, and they continued going backwards and forwards until they had brought enough to fill our cans, besides what we drank. They left us quite quietly.

Oct. 12*th.*—We proceeded along the creek by which we had encamped the night before; the water

was brackish. We attempted to go through some mangroves to the beach, but did not succeed.

Oct. 13*th.*—Jackey, Taylor, and myself took three horses, and tried to get to the beach more to the northward than yesterday. We passed through a belt of mangroves, where the ground was pretty firm, the tide coming up only occasionally; we then proceeded along a sandy ridge to the northward, when we found it succeeded by a salt water lagoon, surrounded by salsolaceous plants and mangroves, which it was impossible to get through. We returned to our camp, and here Mr. Kennedy abandoned the thought of going to the beach, as he felt sure H.M.S. Bramble (which was to have met us at the beginning of August) would have gone; our journey having occupied so much longer time than we could have possibly anticipated. This consideration, combined with the great difficulty which seemed likely to ensue in obtaining water and feed for our horses, determined him to take a different direction.

Oct. 15*th.*—We had prayers as usual this day, being Sunday, at 11 o'clock; to-day we finished the consumption of all our sugar, except a very small quantity, which was reserved for any particular case of sickness.

Oct. 16*th.*—This morning a horse fell into a rocky water-hole, and finding it impossible to get him out alive, we killed him, and cured the flesh as before, drying it in the sun on a stage; the blood, heart, and liver furnished us with a good day's food. Our

meat being well dried by five o'clock in the afternoon, we sprinkled some salt upon it, and put it in bags for the convenience of carrying. We left one of our round tents, and such other things as we could possibly spare behind us at the camp, as our horses were now so weak that they could not carry loads.

Oct. 17*th* and 18*th.*—Our travelling was very uneven, our horses giving us continual trouble from their frequent falls; we had a few narrow belts of scrub to cut through, but they were not very thick.

Oct. 19*th.*—Several of our horses were now quite unable to carry anything but the saddle; we passed through open forest land, with a light soil, sub-soil clay, with isolated blocks of granite rock scattered about. We encamped by a rocky creek, with water in holes only; it ran westerly, and had fresh green feed on each side, the grass having been burned shortly before, and now growing up again.

Oct. 20*th.*—We passed over a piece of stiff ground about two miles in extent, which appeared to have been the scene of a devastating hurricane. It was covered with fallen timber, which rendered it very difficult to cross. The wind must have swept from the south-west to the north-east, and from the appearance of the saplings which were growing from the stumps of some of the trees which had been broken, this terrific storm appeared to have taken place about two years ago. Not a tree had been left standing in the part where we

crossed, nor could we tell how far the devastation had extended to the south-west; but the ground to the north and east being swampy, and covered only with small Melaleucas and Banksias, the wind had not taken much effect. Many of the trees in the middle of the fallen timber measured two feet in diameter. Some were torn up by the roots, and the trunks of others were snapped off at various heights from the ground. The latitude of our camp here was 13° 35′ S.

Oct. 21*st.*—We killed another of our horses to-day, as he was too weak to stand.

Oct. 22*nd.*—We got our meat well dried to-day, and having smoked it a little, packed it as before. Our stock of flour was now reduced to two hundred pounds weight, and many of the men growing very weak, we were obliged to increase our weekly ration a little. Three of the party, Douglas, Taylor, and Costigan, were suffering from diarrhœa, in consequence of having eaten too freely of the pandanus fruit. Their spirits began to fail them, and they frequently complained despairingly to Mr. Kennedy that they should never be able to reach Cape York. Although our horses were so very weak, these men were obliged to ride, being quite unable to walk far at a time. The country before us was very mountainous, but between the hills we found plenty of grass and water: to the south the whole country appeared to be on fire.

Oct. 23*rd* to 25*th.*—We travelled during these

days over a rocky mountainous country, interspersed with deep gullies and creeks, fringed with belts of scrub. In these scrubs I saw the white-apple and the crimson scitamineous plant seen near Rockingham Bay; scattered over the country were a few cedar trees and Moreton Bay chesnuts, and some very fine timber trees belonging to the natural order *Myrtaceæ*, upwards of sixty feet high, and three to four feet in diameter, with fine straight trunks.

Oct. 26th to *28th.*—We travelled over stony hills, the tops of which were occasionally composed of white flint (?), with rusty veins running through it. On the sides of the hills were broken rocks containing mica, hornblende, and crystals of quartz. The grass on these hills had all been newly burned.

Oct. 29th.—Sunday; prayers at eleven o'clock. We this day shot three small wallabies, which were a great treat to us.

Oct. 30th.—This day Luff was taken very lame, being seized with severe pain and stiffness in the right leg; he was quite unable to walk, so we burned the other two round tents to enable him to ride.

Nov. 1st and *2nd.*—We again had to kill a horse which was too weak, and disposed of it as we had our former ones.

Nov. 3rd.—We were cutting through scrub all day, intersected by deep gullies and rocky hills; we crossed a small river, with very uneven rocky bottom, about three feet deep; where we crossed it, it was

running southerly, and as there had been a heavy storm a few days previously, the current was rapid; five of our horses fell in crossing it—the one carrying my specimens in a very bad place; we were obliged to cut the girths, and before I could secure his load two bags of seeds were washed away; we tied our horses to trees, and encamped in a thick bamboo scrub by the side of the river.

Nov. 4th.—This morning Jackey went to examine a scrub through which we wanted to pass, and while out, shot a fine cassowary; it was very dark and heavy, not so long on the leg as the common emu, and had a larger body, shorter neck, with a large red, stiff, horny comb on its head; Mr. Wall skinned it, but from the many difficulties with which he had to contend, the skin was spoiled before it could be properly preserved.

Nov. 5th.—We travelled a short distance to the top of a hill, from which Jackey had seen grass from a tree. We were obliged to kill another horse to-day, and cured the flesh as usual.

Nov. 6th.—We were compelled to shoot two other horses to-day, and as we had no other means of taking the meat with us, we skinned one of them, and made the skin into bags, in which we each carried a few pounds of meat on our backs.

Nov. 7th and *8th.*—We were travelling these two days over very rough rocky ground, intersected with gullies and belts of scrub.

Nov. 9th.—We were obliged this morning to

start without our breakfast, having no bread baked, and being unable to find water. We followed the course of a creek at the foot of a low range of hills running northward, the range being to the westward. In the evening we found water in the creek.

Nov. 10*th.*—We proceeded along the valley of the creek, which was very uneven, and full of small hillocks. Near the spot where we camped a great number of Pandanus trees were growing. On each side of the creek there were a few scattered trees and a thick scrub to the westward. The soil was stiff, with plenty of grass in the valley.

Mr. Kennedy, here, finding from the weak state of some of the men, that it would be impossible for us to reach Cape York before our provisions were exhausted, resolved to form an advance party, consisting of himself, Jackey, Costigan, Luff, and Dunn.

We had but nine horses left, of which number it was proposed that they should take seven, and proceed to Cape York as quickly as possible, to obtain provisions for the rest of the party from the vessel waiting with supplies for our homeward journey.

Nov. 11*th.*—We proceeded along the valley a short distance, with a view of forming our depôt as near to Weymouth Bay as possible. We crossed the creek where it turned eastward, on a kind of bank, which intercepted its course, up to which, from the east, the tide came sometimes, so that on

that side the creek the water was brackish, but very good water was obtainable on the other side the bank.

After we had camped, we killed our last sheep, and Mr. Kennedy proceeded to the top of a high hill, to view the country over which he would have to pass. Shortly after his return to the camp several natives made their appearance, to whom he made a present of a tin plate and a few fish-hooks, which made them quite friendly. While they were looking at us, a great many brown hawks came hovering over the camp. Wall and Jackey shot fourteen or fifteen of them, in the presence of the natives, who retired to the edge of the scrub, and seemed very much surprised to see the hawks fall as soon as they heard the report of the guns. They went into the scrub at dark, but a good watch was kept all night; though the natives did not again make their appearance. One of our dogs killed a young dog belonging to the natives during the night, which I afterwards ascertained was eaten by Dunn, Luff, Costigan, and Goddard.

Nov. 12*th.*—Sunday: prayers at eleven; Jackey and I went to the beach to see if we could find any salt, as our stock was getting very low, but we could not succeed in finding any.

Nov. 13*th.*—This morning everything was prepared for the departure of Mr. Kennedy and his party, and the last of our mutton was served out equally to each of the party.

Mr. Kennedy gave me written instructions how to act during our stay at Weymouth Bay, it being his intention to send for us by water, if possible, as he expected to meet H.M.S. Bramble at Port Albany. He calculated that he should be from ten to fifteen days before he reached that place, and directed me to keep a sharp look out from the hill for a vessel; and should I see one, to hoist a flag on the hill. If the natives were friendly I was to put a ball beneath the flag, and above it should they be hostile. In the evening I was to fire three rockets, at intervals of about twenty minutes.

The party left at the depôt under my charge were eight in number. The provisions consisted of two horses and twenty-eight pounds of flour, the former being very poor and weak.

Not knowing whether he could send for us by water or not, Mr. Kennedy directed me to make my provisions last at least six weeks, saying that it was possible I might get relief fourteen days after his departure, and telling me to keep a very sharp look-out after that time.

I packed up all the dried meat we had left (75 lbs.) and 18 lbs. of flour for Mr. Kennedy to take with him, and about one pound of tea was divided between the two parties. These, with their fire-arms, and a few necessaries of a light description, were all the party took with them. Mr. Kennedy requested me to register the height of the thermometer during my stay at the Bay. The whole of

the party left at the camp were very weak, Luff being the weakest man that proceeded with the party to Cape York.

Before leaving Mr. Kennedy told me that he expected to meet with some difficulties for the first few days, from the nature of the country he had seen from the hill. I did not mention this to the rest of the party, for fear it might still further tend to depress their spirits, as three or four of them even now seemed to despair of ever reaching our destination. I did all in my power to keep them in good heart, but they were saddened and depressed by long suffering.

We removed our camp back across the creek to the side of the high bare hill on which I was to hoist a flag, and from which I could look out for a vessel. It also afforded us a security from the natives, as we could see them at a greater distance. The latitude of this camp was 12° 35′ S.

And thus we settled down in the spot which was to be the burial place of so many of our party—which was fated to be the scene of so much intense suffering, and of such heart-sickening hope deferred. Wearied out by long endurance of trials that would have tried the courage and shaken the fortitude of the strongest, a sort of sluggish indifference prevailed, that prevented the development of those active energies which were so necessary to support us in our critical position. The duties of our camp were performed as if by habit, and knowing how

utterly useless complaint must be, the men seldom repined aloud.

Nov. 14*th.*—We killed the smallest horse early this morning, and had all the meat cut up and on the stage to dry by nine o'clock. I made the blood, heart, liver, kidneys, and tripe last us three days, as they would not keep longer, and we mixed our allowance of flour with them. We had no salt to season them with, as all our salt was required to put in the blood to prevent its turning sour. The heat during this day was very great, the thermometer at noon in the shade standing at 110°. Douglas was very weak. The natives came this afternoon, but did not stay long.

Nov. 16*th.*—The natives this day brought us a few small pieces of fish, but they were old and hardly eatable. I would not allow them to come near the camp, but made signs to them to sit down at a distance, and when they had done so, I went to them and distributed a few fish-hooks. Douglas died this morning, and we buried him at dusk when the natives were gone, and I read the funeral service over him. He was the first of our party we had lost, and his death, the sad precursor of so many more, cast an additional gloom over us.

Nov. 18*th.*—The natives came and brought some of their gins (women) with them. They would only allow one of us at a time to go near them. The women wore very neatly fringed girdles hanging loose about their loins, and shaded themselves with

large fan-palm leaves. Their girdles were made of the leaves of the *Cordyline*. Both men and women were very stout, strong, well-made people—some of the men standing six feet high. They brought us some fish, which they called "mingii," but it was such as they would not even eat themselves; also a kind of paste, made of different kinds of leaves and roots, mixed with the inside of the roasted mangrove seeds, all pounded up together, then heated over a fire in a large shell. This paste they call "dakiaa."* Although we did not much like the taste of the paste, and it was very full of sand, we ate some of it as a vegetable.

Nov. 19*th.*—This morning about fifty or sixty natives, all strongly armed with spears, made their appearance, and by their gestures and manner it was quite evident that they intended to attack us if opportunity offered. As we always kept our firearms in readiness, we stood out in a line, with our guns in our hands. I made signs to them to keep back, but they pretended not to understand us, holding up pieces of fish, crying out *mingii*, *mingii*, (fish, fish), to induce us to come for them, but their designs upon us were too transparent for that. They kept us standing a good while, for I was anxious to refrain from firing on them if possible, and at length they left us without any actually hostile

* This is identical with the *biyu* of Cape York.—See Vol. II. p. 26.

demonstration. Being Sunday, I read prayers to-day.

Nov. 20th.—Taylor died this morning, and we buried him in the evening, by the side of Douglas, and I read the funeral service over him.

Nov. 21st.—About sixty natives came to the camp this morning, well armed with spears, and pieces of fish, which they held up to us, to entice us to come to them. We took no notice, however, of their invitations, but preparing our fire-arms, we turned out. They were now closing round us in all directions, many of them with their spears in their throwing-sticks, ready for use—pointing them to their own necks and sides, and shewing us by their postures how we should writhe with pain when they struck us. Then they would change their tactics and again endeavour to persuade us that they meant us no harm, but they would not lay down their spears. Some of them seemed inclined to go away, but others appeared determined to attack us. After keeping us standing about an hour, eleven spears were thrown at us. Three of my party then fired, slightly wounding one of them, when they all immediately ran away as fast as they could. Some of them, however, remained hovering in sight for some time after. Three of the spears that were thrown fell short of us, the rest passing very close, but fortunately no one was hurt; the three spears which passed us were barbed with bone, and were very heavy.

Nov. 26*th.*—Carpenter died this morning; the poor fellow did not suffer acutely on the approach of death, but the animal energies were destroyed, and they withered away one after another, without pain or struggle. At eleven o'clock, being Sunday, I read prayers, and in the evening we buried our late companion in the bed of the creek, and I read the funeral service over him. The natives came again this morning, leaving their spears at a distance, and brought us a few small fish; but remembering their former treachery, we took very little notice of them, and shewed that they could only expect kind treatment from us, so long as they themselves continued peaceable. During the last few days we shot a few pigeons and parrots, also a small blue heron.

Nov. 27*th.*—We killed another horse this morning, and had the meat all cut up and on the stage by nine o'clock, with all the appearance of a fine day to dry it. But about eleven o'clock a heavy thunder storm came on, and it rained all day. I kept a fire burning near the stage all night.

Nov. 28*th.*—We were very uneasy at the continued wet weather, as it threatened to destroy the scanty remains of our provision, the flesh already beginning to smell very badly.

Nov. 29*th.*—It was raining heavily all day, and our meat became almost putrid.

Nov. 30*th.*—This day a fresh breeze blew, and there was no rain; I cut up all the meat that would

hold together into thin slices, but a great deal of it was quite rotten. The blood puddings, tripe, feet, and bones, lasted us till this day. I saved the hide of this horse for ourselves, the other I had fed our dogs on: Mr. Kennedy having requested me to keep them alive if possible, so that we had to spare a little from our scanty meals for them.

Dec. 1st.—The wind was blowing strong from the south-east this morning. On going up the hill in the afternoon I saw a schooner from the northward beating to the southward. I supposed her to be the Bramble, as it was about the time Mr. Kennedy had given me expectation of being relieved by water, and I afterwards found I was right in this supposition.

I naturally concluded she had come for us; and full of hope and joy I immediately hoisted a flag on a staff we had previously erected on a part of the hill where it could be seen from any part of the bay. We placed a ball above the flag to put the crew on their guard against the natives. We then collected a quantity of wood, and at dusk lighted a fire, and kept it burning till about half-past seven or eight o'clock. I then fired off three rockets one after the other, at intervals of about twenty minutes. I also took a large pistol up the hill, and stood for some time firing it as quickly as I could load it, thinking they might perhaps see the flash of that, if they had not seen the rockets.

Dec. 2nd.—Early this morning I was up, strain-

ing my eyes to catch a view of the bay, and at length saw the schooner standing in to the shore, and during the forenoon a boat was lowered. I now made quite certain they were coming for us, and thinking they might come up the creek in the boat for some distance, I hastened down the hill, and began to pack up a few things, determined to keep them waiting for our luggage no longer than I could help. I looked anxiously for them all the afternoon, wondering much at their delay in coming, until at last I went up the hill, just in time to see the schooner passing the bay. I cannot describe the feeling of despair and desolation which I in common with the rest of our party experienced as we gazed on the vessel as she fast faded from our view. On the very brink of starvation and death, —death in the lone wilderness, peopled only with the savage denizens of the forest, who even then were thirsting for our blood—hope, sure and certain hope, had for one brief moment gladdened our hearts with the consoling assurance, that after our many trials, and protracted sufferings, we were again about to find comfort and safety. But the bright expectancy faded; and although we strove to persuade ourselves that the vessel was not the Bramble, our hearts sank within us in deep despondency.

Dec. 4th.—We yesterday finished our scanty remnant of flour; and our little store of meat,

which we had been able to dry, could have but very little nourishment in it. Goddard and I went to the beach and got a bag of shell-fish, but found it very difficult to get back to the camp through the mangroves, we were in so weak a state.

Dec. 7th.—This day I took Mitchell with me to the beach, and procured another bag of shell-fish. During the last few days we shot a very small wallaby and three or four Torres' Strait pigeons. These afforded us some relief, as our horse-flesh was so very bitter, that nothing but unendurable hunger could have induced us to eat it. A number of small brown beetles were generated from it, which ate it, and we were also much annoyed by flies. We all suffered more or less from bad eyes.

Dec. 9th.—The natives visited us this morning, and brought with them a few pieces of turtle's entrails and a few nondas. I gave them an old shirt and a knife, the latter of which was highly prized by them. They call turtle "mallii," and the sun "youmboll." Goddard had a fit of ague to-day, followed by fever.

Dec. 10th.—We all of us had fits of ague this morning, and none of us could get up till the afternoon, when, being Sunday, I read prayers.

Dec. 11th.—The natives came this morning, and brought us a little vegetable paste, and some pieces of turtle's entrails, with some shark's liver. The latter was fresh, but one could not eat it, as it all melted

into a yellowish oil, when boiled for a few minutes. I gave them a few fish-hooks, but found it very difficult to get them to leave the camp.

Dec. 13*th.*—This morning Mitchell was found dead by the side of the creek, with his feet in the water. He must have gone down at night to get water, but too much exhausted to perform his task, had sat down and died there. None of us being strong enough to dig a grave for him, we sewed the body in a blanket, with a few stones to sink it, and then put it into the brackish water.

Dec. 15*th.*—The thermometer fell this morning and was broken. It was raining heavily all day, and two bags of my seeds, and several other little things, were washed out of the tent by the water which ran down the hill. We were all very ill and weak.

Dec. 16*th.*—It was raining this morning, and we remained in the tent. Hearing one of our dogs barking, however, I went out and saw several natives with pieces of fish and turtle, which I took from them, when they left us. The natives also brought us some roasted nymphæa roots, which they call "dillii." During the last few days we shot seven pigeons. Wall and Goddard used to go into the scrub and sit beneath a tree, to which they used to come for berries to feed their young, and watching their opportunity, shoot them.

Dec. 21*st.*—Our kangaroo dog being very weak, and unable to catch anything, we killed, and lived

on him for two days. There was very little flesh on his bones, but our dried meat was so bad, that we very much enjoyed the remains of our old companion, and drank the water in which we boiled him.

Dec. 24th.—The natives took a tin case from Wall whilst he was talking to them, he not being able to resist them. My legs had swelled very much, and I was able to walk but a very short distance.

Dec. 26th.—The natives brought us a few pieces of fish and turtle, but both were almost rotten; they also gave us a blue-tongued lizard, which I opened and took out eleven young ones, which we roasted and ate. There was nothing but scales on the old one, except in its tail.

We always equally divided whatever we got from the natives, be it what it might; but they brought us very little that was eatable. I could easily perceive that their pretended good feeling towards us was assumed for the sake of fulfilling their own designs upon us. Although they tried to make us believe they were doing all in their power to benefit us, their object was to obtain an opportunity of coming upon us by surprise and destroying us. They had at many times seen the fatal effects of our fire-arms, and I believe that it was only the dread of these, that prevented them from falling upon us at once, and murdering us. They were a much finer race of men than the natives we had

seen at Rockingham Bay, most of the men being from five feet ten to six feet high. The general characteristics of the race were different from those of the other aborigines I had ever seen, and I imagined that they might be an admixture of the Australian tribes and the Malays, or Murray Islanders. Some of them had large bushy whiskers, with no hair on their chins or upper lips, having the appearance of being regularly shaved. It would be almost impossible for any class of men to excel these fellows in the scheming and versatile cunning with which they strove to disguise their meditated treachery. In fine weather I always had our firearms standing out for them to see, and once or twice every night I fired off a pistol, to let them know we were on the look-out by night as well as by day.

Dec. 28*th.*—Niblett and Wall both died this morning; Niblett was quite dead when I got up, and Wall, though alive, was unable to speak; they were neither of them up the day previous. I had been talking with them both, endeavouring to encourage them to hope on to the last, but sickness, privation, and fatigue had overcome them, and they abandoned themselves to a calm and listless despair. We had got two pigeons the day before, which in the evening were boiled and divided between us, as well as the water they were boiled in. Niblett had eaten his pigeon, and drank the water, but Wall had

only drank the water and eaten part of his half pigeon. —About eleven o'clock, as many as fifty natives, armed with spears, and some of them painted with a yellowish earth, made their appearance in the vicinity of our camp. There were natives of several strange tribes amongst them. They were well aware that neither Niblett nor Wall was able to resist them, if they did not know they were dead. They also knew that we were very weak, although I always endeavoured as much as possible to keep that fact from them. This morning when I made signs to them to lay down their spears they paid no attention, with the exception of two, who had been in the habit of coming very frequently to the camp. These two came running up quite close to us, without their spears, and endeavoured to persuade one of us to go across a small dry creek, for a fish which another of the rascals was holding up to tempt us. They tried various methods to draw our attention from the rest, who were trailing their spears along the ground, with their feet, closing gradually round us, and running from tree to tree, to hide their spears behind them. Others lay on their backs on the long grass, and were working their way towards us, unnoticed as they supposed. Goddard and myself stood with our guns in readiness and our pistols by our sides for about two hours, when I fell from excessive weakness. When I got up we thought it best to send them away at once,

or stand our chance of being speared in the attempt, both of us being unable to stand any longer. We presented our guns at the two by our side, making signs to them to send the others away, or we would shoot them immediately. This they did, and they ran off in all directions without a spear being thrown or a shot fired. We had many times tried to catch fish in the creek during our stay at Weymouth Bay, with our fishing lines, but never could get as much as a bite at the bait.

As the evening came on, there came with it the painful task of removing the bodies of our unfortunate companions who had died in the morning. We had not strength to make the smallest hole in the ground as a grave; but after great exertion we succeeded in removing the bodies to a small patch of phyllanthus scrub, about four feet high, and eighty yards from the tent. We then laid them side by side, and covered them with a few small branches, and this was all the burial we were enabled to give them.

Dec. 29th.—Goddard went into the scrub, and shot three pigeons. We ate one of them at night, and the others we reserved till next day. Our bowels were greatly relaxed, which was partly stayed by eating a few nondas, which we got occasionally.

The six weeks having expired, which Mr. Kennedy had led me to expect would be the longest period we should have to wait, I now began to fear

the rainy season had set in, and filled the creeks to the northward, so that his party had been unable to cross them, or that some untoward accident had happened, which prevented us being relieved.

I did not quite despair, but I knew that we could not live long. Our shot was almost consumed, not having more than eight or ten charges left, and although we had plenty of ball, we were too weak to attempt to form any plan to make shot. Our sole remaining companion, the sheep dog, I intended to kill in a day or two, but he would not last long, as he was nothing but skin and bone.

Dec. 30th.—Early this morning we ate the two pigeons left yesterday, and boiled each a quart of tea, from the leaves we had left; but we had not had any fresh tea to put into the pot for some time. Goddard then went into the bush, to try to get another pigeon or two, and if the natives made their appearance, I was to fire a pistol to recall him to the camp. After he had been gone, I saw natives coming toward the camp, and I immediately fired a pistol; but before Goddard could return they came into the camp, and handed me a piece of paper, very much dirtied and torn. I was sure, from the first, by their manner, that there was a vessel in the Bay. The paper was a note to me from Captain Dobson, of the schooner Ariel, but it was so dirtied and torn that I could only read part of it.

For a minute or two I was almost senseless with the joy which the hope of our deliverance inspired.

I made the natives a few presents, and gave them a note to Captain Dobson, which I made them easily understand I wanted them to take to that gentleman. I was in hopes they would then have gone, but I soon found they had other intentions. A great many natives were coming from all quarters well armed with spears. I had given a shirt to the one who had brought the note, and put it on him ; but I saw him throw down the note and pull off the shirt, and picking up his spear he joined the rest, who were preparing to attack us. We were expecting every moment to be attacked and murdered by these savages, our newly awakened hope already beginning to fail, when we saw Captain Dobson and Dr. Vallack, accompanied by Jackey and a man named Barrett, (who had been wounded a few days before in the arm by a barbed spear,) approaching towards us, across the creek. I and my companion, who was preserved with me, must ever be grateful for the prompt courage with which these persons, at the risk of their own lives, came to our assistance, through the scrub and mangroves, a distance of about three miles, surrounded as they were all the way by a large number of armed natives.

I was reduced almost to a skeleton. The elbow bone of my right arm was through the skin, as also the bone of my right hip. My legs also were swollen to an enormous size. Goddard walked to the boat, but I could not do so without the assistance of Captain Dobson and Dr. Vallack, and I had to

be carried altogether a part of the distance. The others, Jackey and Barrett, kept a look out for the blacks. We were unable to bring many things from the camp. The principal were, the fire-arms and one parcel of my seeds, which I managed to keep dry, containing eighty-seven species. All my specimens were left behind, which I regretted very much: for though much injured, the collection contained specimens of very beautiful trees, shrubs, and orchideæ. I could also only secure an abstract of my journal, except that portion of it from 13th November to 30th December, which I have in full. My original journal, with a botanical work which had been kindly lent me by a friend in Sydney for the expedition, was left behind. We got safely on board the Ariel; and after a very long passage, arrived in Sydney.

I am confident that no man could have done more for the safety of the party than was done by Mr. Kennedy, nor could any man have exerted himself more than he, in the most distressing circumstances of our perilous journey. He walked by far the greater part of the distance, giving his own horses for the use of the weak men, and the general service of the expedition. I never rode but two hours all through the journey, and that was on two successive days when we were in the vicinity of Cape Sidmouth, and I was suffering from bad feet.

The unfortunate death of our brave and generous leader, deeply and extensively as I know it to have

been lamented, can have no more sincere mourner than myself.

The tale of his sufferings and those of his party has already been read and sympathised over by hundreds, and it would ill become me to add anything to the artless narrative of the faithful and true-hearted Jackey, who having tended his last moments, and closed his eyes, was the first, perhaps the most disinterested, bewailer of his unhappy fate.

STATEMENT OF JACKEY JACKEY,

MADE BY HIM ON BOARD THE ARIEL, AND WRITTEN DOWN BY DR. VALLACK.

I STARTED with Mr. Kennedy from Weymouth Bay for Cape York, on the 13th November, 1848, accompanied by Costigan, Dunn, and Luff, leaving eight men at the camp, at Weymouth Bay. We went on till we came to a river which empties itself into Weymouth Bay. A little further north we crossed the river; next morning a lot of natives camped on the other side of the river. Mr. Kennedy and the rest of us went on a very high hill and came to a flat on the other side and camped there; I went on a good way next day; a horse fell down a creek; the flour we took with us lasted three days; we had much trouble in getting the horse out of the creek; we went on, and came out, and camped on the ridges; we had no water. Next morning went on and Luff was taken ill with a very bad knee; we left him behind, and Dunn went back again and brought him on; Luff was riding a horse named Fiddler; then we went on and camped at a little creek; the flour being out this day we commenced eating horse-flesh, which Carron gave us when we left Weymouth Bay; as we went on we came on a small river, and saw no blacks there;

as we proceeded we gathered nondas, and lived upon them and the meat; we stopped at a little creek and it came on raining, and Costigan shot himself; in putting his saddle under the tarpaulin, a string caught the trigger and the ball went in under the right arm and came out at his back under the shoulder; we went on this morning all of us, and stopped at another creek in the evening, and the next morning we killed a horse named Browney, smoked him that night and went on next day, taking as much of the horse as we could with us, and went on about a mile and then turned back again to where we killed the horse, because Costigan was very bad and in much pain; we went back again because there was no water; then Mr. Kennedy and I had dinner there, and went on in the afternoon leaving Dunn, Costigan, and Luff at the creek. This was at Pudding-pan Hill, near Shelburne Bay. Mr. Kennedy called it Pudding-pan Hill. We left some horse meat with the three men at Pudding-pan Hill, and carried some with us on a pack horse. Mr. Kennedy wanted to make great haste when he left this place, in order to get the doctor to go down to the men that were ill. This was about three weeks after leaving Weymouth Bay. One horse was left with the three men at Pudding-pan Hill, and we (Kennedy and myself) took with us three horses. The three men were to remain there until Mr. Kennedy and myself had gone to and returned from Cape York for them.

Mr. Kennedy told Luff and Dunn when he left them if Costigan died they were to come along the beach till they saw the ship, and then to fire a gun; he told them he would not be long away, so it was not likely they would move from there for some time. They stopped to take care of the man that was shot, we (me and Mr. Kennedy) killed a horse for them before we came away; having left these three men, we camped that night where there was no water; next morning Mr. Kennedy and me went on with the four horses, two pack horses, and two saddle horses; one horse got bogged in a swamp. We tried to get him out all day, but could not, we left him there, and camped at another creek. The next day Mr. Kennedy and I went on again, and passed up a ridge very scrubby, and had to turn back again, and went along gulleys to get clear of the creek and scrub. Now it rained, and we camped; there were plenty of blacks here, but we did not see them, but plenty of fresh tracks, and camps, and smoke. Next morning we went on and camped at another creek, and on the following morning we continued going on, and camped in the evening close to a scrub; it rained in the night. Next day we went on in the scrub, but could not get through. I cut and cleared away, and it was near sundown before we got through the scrub—there we camped. It was heavy rain next morning, and we went on in the rain, then I changed horses and rode a black colt, to spell the other, and rode him all day, and in

the afternoon we got on clear ground, and the horse fell down, me and all; the horse lay upon my right hip. Here Mr. Kennedy got off his horse and moved my horse from my thigh; we stopped there that night, and could not get the horse up; we looked to him in the morning and he was dead; we left him there; we had some horse meat left to eat, and went on that day and crossed a little river and camped. The next day we went a good way; Mr. Kennedy told me to go up a tree to see a sandy hill somewhere; I went up a tree, and saw a sandy hill a little way down from Port Albany. That day we camped near a swamp; it was a very rainy day. The next morning we went on, and Mr. Kennedy told me we should get round to Port Albany in a day; we travelled on all day till twelve o'clock (noon), and then we saw Port Albany; then he said, "There is Port Albany, Jackey—a ship is there—you see that island there," pointing to Albany Island; this was when we were at the mouth of Escape River; we stopped there a little while; all the meat was gone; I tried to get some fish but could not; we went on in the afternoon half a mile along the river side, and met a good lot of blacks, and we camped; the blacks all cried out "powad powad," and rubbed their bellies; and we thought they were friendly, and Mr. Kennedy gave them fish-hooks all round; every one asked me if I had any thing to give away, and I said, no; and Mr. Kennedy said, give them your

knife, Jackey; this fellow on board was the man I gave the knife to; I am sure of it; I know him well; the black that was shot in the canoe was the most active in urging all the others on to spear Mr. Kennedy; I gave the man on board my knife; we went on this day, and I looked behind, and they were getting up their spears, and ran all round the camp which we had left; I told Mr. Kennedy that very likely those black fellows would follow us, and he said, "No, Jackey, those blacks are very friendly;" I said to him "I know these black fellows well, they too much speak;" we went on some two or three miles and camped; I and Mr. Kennedy watched them that night, taking it in turns every hour all night; by-and-by I saw the black fellows; it was a moonlight night; and I walked up to Mr. Kennedy, and said to him, there is plenty of black fellows now; this was in the middle of the night; Mr. Kennedy told me to get my gun ready; the blacks did not know where we slept, as we did not make a fire; we both sat up all night; after this, daylight came, and I fetched the horses and saddled them; then we went on a good way up the river, and then we sat down a little while, and we saw three black fellows coming along our track, and they saw us, and one fellow ran back as hard as he could run, and fetched up plenty more, like a flock of sheep almost; I told Mr. Kennedy to put the saddles on the two horses and go on, and the blacks came up, and they

followed us all the day; all along it was raining, and I now told him to leave the horses and come on without them, that the horses made too much track. Mr. Kennedy was too weak, and would not leave the horses. We went on this day till towards evening, raining hard, and the blacks followed us all the day, some behind, some planted before; in fact, blacks all around following us. Now we went on into a little bit of a scrub, and I told Mr. Kennedy to look behind always; sometimes he would do so, and sometimes he would not look behind to look out for the blacks. Then a good many black fellows came behind in the scrub, and threw plenty of spears, and hit Mr. Kennedy in the back first. Mr. Kennedy said to me, "Oh! Jackey, Jackey! shoot 'em, shoot 'em." Then I pulled out my gun and fired, and hit one fellow all over the face with buck shot; he tumbled down, and got up again and again and wheeled right round, and two black-fellows picked him up and carried him away. They went away then a little way, and came back again, throwing spears all around, more than they did before; very large spears. I pulled out the spear at once from Mr. Kennedy's back, and cut out the jag with Mr. Kennedy's knife; then Mr. Kennedy got his gun and snapped, but the gun would not go off. The blacks sneaked all along by the trees, and speared Mr. Kennedy again in the right leg, above the knee a little, and I got speared over the eye, and the blacks were now throwing their spears all

ways, never giving over, and shortly again speared Mr. Kennedy in the right side; there were large jags to the spears, and I cut them out and put them into my pocket. At the same time we got speared, the horses got speared too, and jumped and bucked all about, and got into the swamp. I now told Mr. Kennedy to sit down, while I looked after the saddle-bags, which I did; and when I came back again, I saw blacks along with Mr. Kennedy; I then asked him if he saw the blacks with him, he was stupid with the spear wounds, and said "No;" then I asked where was his watch? I saw the blacks taking away watch and hat as I was returning to Mr. Kennedy; then I carried Mr. Kennedy into the scrub: he said, "Don't carry me a good way;" then Mr. Kennedy looked this way, very bad (Jackey rolling his eyes). I said to him, "Don't look far away," as I thought he would be frightened; I asked him often "Are you well now?" and he said, "I don't care for the spear wound in my leg, Jackey, but for the other two spear wounds in my side and back," and said, "I am bad inside, Jackey." I told him blackfellow always die when he got spear in there (the back); he said, "I am out of wind, Jackey;" I asked him, "Mr. Kennedy, are you going to leave me?" and he said, "Yes, my boy, I am going to leave you;" he said, "I am very bad, Jackey; you take the books, Jackey, to the captain, but not the big ones, the Governor will give anything for them;" I then tied up the papers: he then said,

"Jackey, give me paper and I will write;" I gave him paper and pencil, and he tried to write, and he then fell back and died, and I caught him as he fell back and held him, and I then turned round myself and cried: I was crying a good while until I got well; that was about an hour, and then I buried him; I digged up the ground with a tomahawk, and covered him over with logs, then grass, and my shirt and trowsers; that night I left him near dark; I would go through the scrub, and the blacks threw spears at me, a good many, and I went back again into the scrub; then I went down the creek which runs into Escape River, and I walked along the water in the creek very easy, with my head only above water, to avoid the blacks, and get out of their way; in this way I went half a mile; then I got out of the creek, and got clear of them, and walked on all night nearly, and slept in the bush without a fire; I went on next morning, and felt very bad, and I spelled for two days; I lived upon nothing but salt water; next day I went on and camped one mile away from where I left, and ate one of the pandanus fruits; next morning I went on two miles, and sat down there, and I wanted to spell a little there, and go on; but when I tried to get up, I could not, but fell down again very tired and cramped, and I spelled here two days; then I went on again one mile, and got nothing to eat but one nonda; and I went on that day and camped, and on again next morning, about half a mile, and sat down where there was good

water, and remained all day. On the following morning, I went a good way, went round a great swamp and mangroves, and got a good way by sundown; the next morning I went and saw a very large track of blackfellows; I went clear of the track and of swamp or sandy ground; then I came to a very large river, and a large lagoon; plenty of alligators in the lagoon, about ten miles from Port Albany. I now got into the ridges by sundown, and went up a tree and saw Albany Island; then next morning at four o'clock, I went on as hard as I could go all the way down, over fine clear ground, fine iron bark timber, and plenty of good grass; I went on round the point (this was towards Cape York, north of Albany Island) and went on and followed a creek down, and went on top of the hill, and saw Cape York; I knew it was Cape York, because the sand did not go on further; I sat down then a good while; I said to myself this is Port Albany, I believe inside somewhere; Mr. Kennedy also told me that the ship was inside, close up to the main land; I went on a little way, and saw the ship and boat; I met close up here two black gins and a good many piccanninies; one said to me "powad, powad;" then I asked her for eggs, she gave me turtle's eggs, and I gave her a burning glass; she pointed to the ship which I had seen before; I was very frightened of seeing the black men all along here, and when I was on the rock cooeying, and murry murry glad when the boat came for me.

Dr. VALLACK'S STATEMENT.

A FULL account of proceedings taken by the Ariel, from the time of Jackey's arrival at Cape York, on the 23rd December, 1848, up to the time of her departure from Weymouth Bay, on the 31st December, 1848.

Dec. 23rd, 1848.—About eight o'clock, A.M., Captain Dobson called down to me, saying that he thought Mr. Kennedy was arrived, as there was a black on shore with a shirt on and trousers. On going upon deck, the Captain had left in the dingey for the main land, where the black was standing; I observed with the glass and the naked eye, the black first standing, then walking very lame, then sitting down on a rock on the main land. The dingey made there, and took him on board. It turned out to be Jackey, of Mr. Kennedy's party, who looked very haggard and told a woeful tale. After being on board I wished to take down depositions, fearing anything might happen to him from over-excitement. Depositions were taken, before which he became faint, and a glass of wine revived him, which he told us afterwards, made him "budgeree" (that is, well again). I consulted with the Captain as to what should be done, and it was

immediately determined upon to leave Port Albany with all possible speed, to save the surviving parties at Pudding-pan Hill and Weymouth Bay,—three men at the former place, and the rest at the latter. It being necessary to take the sheep with us, they were all but three shipped in the evening, and prompt orders given for the vessel to be got ready for a start in the morning the first thing. In the meantime I went on shore with the Captain to get the bullock in to kill, Barrett, as well, on horseback, but we found it was impossible to get him in—he was so wild: he was therefore shot at the far and south end of the island, with the intention of bringing as much as possible of the carcass away. It getting late in the evening, however, none was taken away, nor is there time now to do so, and to do also an act of duty and humanity to the yet living human beings.

Dec. 24th.—Before ten A.M., a dead calm; at turn of tide or rather before, weighed anchor, but the tide took us towards Cape York a mile; the tide now turned, and a gentle breeze took us through the strait. The breeze continued, and at sundown we anchored five miles south of Point Shadwell, Mount Adolphus bearing N.N.W., seven leagues; employed during the day conversing with Jackey, taking down in pencil what he had to say, changing the subject now and then by speaking of his comrades at Jerry's Plains. I did so as he told me what kept him awake all last night was thinking

about Mr. Kennedy. Saw three native fires on our voyage here, one on this south end of Albany Island, one between it and here, and one on shore abreast of us.

Dec. 25th.—At daylight in the morning a dead calm, and the hottest day we have had, the sun was so glaring that the altitude could not be taken. At about a quarter before ten A.M. a light breeze came on and we left our anchorage, the breeze increased a little, before eleven; saw what appeared to be an island at first; on nearing, found it to be a canoe, about fifteen feet long, with seven or eight natives in it, shearing about, sometimes in one direction, sometimes in another. After a little we heard them calling out, "paoud," "whappee," "chauca," some of them standing up. I named to the Captain that I thought they must be from Cape York, from their words, and that it would be at least desirable to glean information from them, if possible, concerning Mr. Kennedy. The Captain said, "We will not call out 'paoud,'" (which means peace) but occasionally the words "chauca," (tobacco) "biskey," (biscuit) were called out from the ship. They from this drew close to the vessel, very wary, however, in doing so. Jackey was placed in the fore-top, and word came that Jackey knew all these fellows, that they were the party who speared Mr. Kennedy. One black was allowed to come on board, and whilst he was partly in the ship, word came to me by Parker (a seaman), that Jackey wanted to speak to

me. On going to Jackey, he said, "That fellow," pointing to the one named, "is the fellow that speared Mr. Kennedy; I gave him a knife, keep him, bale (don't) let him go. All those fellows threw spears at Mr. Kennedy." This native was immediately secured. He struggled hard, and it was as much as three men could do to secure him. The other blacks in the canoe now jumped overboard, and observing now that the native secured had a part of a bridle round his arm, and a piece of sinew, or tendon of a horse, and Jackey being so positive as to identity, it was determined to examine the canoe, and an order was given to fire over their heads, whilst they (the blacks) were endeavouring to recover their canoe. The ship's long-boat was sent after the canoe, but in the meantime the blacks had recovered it, and a hard chase took place, the blacks paddling away towards the shore. The boat overhauled them, when a shot was fired from the boat, and as the boat closed upon them I saw the blacks jump overboard again, and afterwards the ship's boat bring back the canoe. During this time several shots were fired over them, and near them, from the ship. The boat returned in about twenty minutes from the time of leaving, with the canoe. Barrett said to me when alongside that he was speared, and that he had shot the black who had speared him, and who was now in the canoe nearly dead. It appears that one black had stuck to his canoe, and on the ship's boat nearing it,

had thrown a spear into Barrett's arm, and was on the eve of throwing another at him, when Barrett shot him. I went into the canoe, and examined the black, and found the ball had gone through his body, entering on the one side and coming out on the opposite. The ball must have gone through the stomach, from its direction. He was now dying—nearly dead. The canoe was chopped up, and, with the black, disappeared a short time afterwards. I dressed Barrett's wounds,—three of them, of a triangular shape, in the lower and fleshy part of the fore-arm. From the canoe were brought the leg part of a pair of trowsers, three spears, a piece of iron of a saddle, hooks and lines, &c.; and a piece of moleskin was taken off the native's leg, which Jackey says was part of his trowsers, which he tied round Mr. Kennedy's head when he buried him, Jackey being sure that they had dug up Mr. Kennedy. I observed at the time that the native was nearly on board, the moment the blacks saw Jackey, they looked at each other as if every thing was not right. Previously to their jumping overboard, when Jackey shewed the native the spear wound over his eye, he would quickly turn away and not look him in the face. Whilst the native was being secured, after being removed to the fore part of the vessel, a mutton bone with meat was offered him which he grappled at and ate voraciously, saying, "paoud, paoud." The wind increased and was fair, and Jackey pointed out a hill

ahead of us which he said was like Pudding-pan Hill, near which the three men were left. This hill was Pudding-pan Hill, according to the chart. As we neared Pudding-pan Hill, Jackey said, this is not the place, that he had been mistaken, and, on continually looking at it, he became the more confirmed and positive, and said it was no use whatever to land there, but that we must go further on; we passed the hill; in the meantime the Captain and I consulted as to what should be done, knowing this was the only Pudding-pan Hill on the chart; but Jackey, who had been placed in the fore-top, became more and more positive, saying at length, "Do you think I am stupid?--Mr. Kennedy sent me from the camp to look out the coast, so that I might know it again when I came back in the ship, and I will tell you when we come to it, the ship must go on that way further," pointing to the south. Proceeding on, towards evening, off Hannibal Bay we saw numerous native fires, and in one spot I observed about forty natives. Before sundown a canoe was making off to us, but after sun-set we gradually lost sight of it, and some time after this we anchored.

Dec. 26th.—At twenty minutes to six A.M., got under weigh with a light breeze, in the centre of Hannibal Bay, Risk Point ahead. In about ten minutes we struck on a coral reef, and soon got off again; we anchored this day in Shelburne Bay, opposite where Jackey wished us to proceed to

recover the three men; he was sure this was the place, seeing the mountain which Mr. Kennedy called Pudding-pan Hill, and other mountains there, which were wanting at the Pudding-pan Hill of the chart; he was perfectly confident as to this being the right place, and it may be here stated that this hill is the very fac-simile of the Pudding-pan Hill of the chart. In sailing in the bay we found the water getting very shallow, from three to four, and lastly, when we anchored, two and a-half fathoms, and this unfortunately, was a long way off from the land, say three or four miles; after consultation with the Captain and Jackey, our main guide, we determined on going on shore at the place pointed out by Jackey before daylight on the following morning; during this afternoon several fires, about five, were in sight along the coast in the bay, and not many natives seen; I saw five; after a time it had been determined who should be the party to go to recover the three men. The Captain, Jackey, Barrett, Thomas (the sailor), and myself, formed the party. The evening was employed in getting our guns in good order for the morrow. The Captain thought he observed on shore natives with wearing apparel on.

Dec. 27th.—At three o'clock A.M., the Captain called me, and such had been the preparation last night that in a quarter of an hour we were in the longboat, steering for the shore, and just as daylight was peeping we were near the shore in shallow

water, and a fire sprung up nearly in front of us a little way in from the beach. The boat struck on the ground, and we waded through the water for about a hundred yards or more knee deep. Jackey took the lead, the Captain and I following, Barrett and Tom behind, and mounted the low scrubby cliff about two hundred yards from where we saw the fire. On we trudged through dense scrub inland for about an hour, when Jackey said we must go further up that way, pointing more in the south part of the bay; that is where I want to go, said he, and that we had better cross there in the boat and recommence the trip. On reaching the coast we hailed the boat, which was anchored off a little, and waded out to it. Having seen a great smoke last evening and apparently one this morning, some distance beyond where Jackey wished us to land, he was asked if we should go first to this native fire and camp, and see if they have anything there belonging to the three men, and Jackey said, yes. We proceeded there, a distance of about four miles, to the southernmost part of the bay, and landed, but could discover only the remains of a bush fire and no camp; we now left this part and proceeded to exactly where Jackey pointed out on the beach, more in the central part of the bay, some three miles across, and landed, telling the men in the boat to anchor a little higher up to the north, where Jackey said we should come out at by-and-bye. We left word with the men in the boat that

we might be away for three hours or more, and that we should fire a gun on our return, which was to be answered by them.

Jackey was now head and leading man in every sense of the word, and away we went in a westerly direction, for about, say, five or six miles; Jackey telling us to look out behind and all about for the blacks. After proceeding some four miles of the distance, we came to a creek where we stopped for a few minutes; Jackey was evidently tired, not recovered, and could not walk fast, and although we went off at first at a good pace, Jackey was getting lame, and had been obliged to sit down three times on the journey. About two miles beyond this creek Jackey got up into a tree, and returned, saying, he could see the mountain near which the camp was, but that it was a long way off, that we could not get there to-night, but that we must camp in the bush, and get there to-morrow. It here became necessary to pause. The ship was left with two hands only in her, anchored in shallow water, and the Captain said promptly that he could not proceed farther without great risk of losing the ship, either from its coming on to blow, or that natives may attack her in their canoes; (here I may say what has been omitted, viz., that in the early part of the morning we saw and examined a canoe close to where we first landed, and found part of a cloak in it, which Jackey immediately pronounced as belonging to the white men at the camp) and it was

determined, well considering all circumstances, to return to the ship, which we did, coming out on the beach under mangroves, at the very spot we told Jackey to come out at on our leaving. We arrived at the ship at twelve minutes before four P.M. During our absence the men in the boat had seen on the beach from fifty to one hundred natives. We saw none. The day has been very hot, and we are in a fix, surrounded by reefs, and some little anxiety is existing as to how we shall get out again. We have determined to proceed to Weymouth Bay, and in so doing I have taken everything into consideration. We have eight men to attend to at Weymouth Bay. In all probability the three men here are dead, for when Jackey left them, Costigan was nearly dead, and Luff was very ill. The cloak taken from the canoe shews that the blacks have found their camp, and had we gone on there, which would have taken a day or two at least more, we should only have found, I verily believe, as Jackey says, "bones belonging to white fellows." After getting on board, Jackey went to sleep, thoroughly done up. He fell asleep also in coming off in the boat.

Dec. 28*th*.—This has been a day of anxiety. We left a little after daylight, not without feelings of disappointment and dissatisfaction at not having been successful in rescuing the men, who it was possible might be yet alive. We were surrounded by reefs, a light breeze, and fair depth of water—called out

by the leadsman, 2, 2½, 2, 3 fathoms, until after some time we got into deeper water, and passed out of the Bay in safety. Not a fire had been seen on the shore all night, nor was there a native to be seen this morning from the vessel. We passed numerous islands, until the Piper Islands came in sight. We calculated upon making them for our anchorage, but a squall came on, and the wind shifted, and we were compelled to anchor at half-past seven P.M., in fifteen fathoms water, near a reef. Some native fires were seen on the coast to-day. I find the native on board understands and speaks the same language as the Port Albany blacks, and repeats all their names to me. He eats and drinks heartily, and lends apparently a most willing hand towards securing himself with the leather straps.

Dec. 29.—Left our anchorage at daylight in the morning; passed between the Piper Islands and Bald Head. When off Fair Cape saw a smoke on the shore, and three natives, who immediately disappeared in the scrub and were seen no more. On rounding the Cape it became a dead calm, and it was intensely hot; we saw a smoke and a large fire ahead of us. Jackey recognised the land, and said the smoke was at the mouth of a river which Mr. K. and he had crossed after leaving the camp. The land where the camp and eight men were Jackey pointed out ahead of us, opposite to Weymouth Bay; a heavy squall and thunder storm with rain came on very suddenly, and beyond the mouth of

the river, with camping hill ahead of us, we came to an anchor, between two and three o'clock P. M.; could not see any flag-staff on the hill pointed out by Jackey, and which hill is very conspicuous and bald, nor could we see any symptom of living beings along the coast in the bay. It was too great a distance to land to-night, and the Captain said if it came on to blow the boat could not be got back again. Employed the other part of the day in looking through the glass and with the naked eye to see the flag-staff and flag, or any other sign, (Jackey having informed us they would have a flag on the top of the hill,) but none was to be seen, not a native, and I have reason to believe every one of the eight have been sacrificed; it looks suspicious not seeing a native, for Jackey says they used to bring fish to the camp, and there were plenty of them. The Captain is to take the ship in as near as possible to the hill, and it is determined to go on shore with the same party who assisted us at Shelburne Bay, and go up to the camp to-morrow well armed. All this evening—a solemn, silent, inexpressible gloom; no rockets, no gun, no fire; to-morrow will tell a tale.

Dec. 30th.—At daylight this morning the ship was got under weigh, and sailed nearer in towards the hill which Jackey had pointed out as being the hill where "camp sit down," and anchored in about two fathoms of water about half a mile off the land. Five canoes were now seen creeping off towards us

from under the mangroves, with from five to ten natives in each, (there was yet no flag or any token of white people on the hill); the canoes gradually neared in a string, and one came cautiously alongside, making signs and saying "ferraman," "ferraman," "white man," "white man," and pointing towards Jackey's mountain. We were at first doubtful whether they were disposed to be friendly or not, and afterwards seeing some children with them and one or two females, we concluded they were disposed to be friendly, and that they knew the parties at the camp. A few lines were written to the party at the camp, stating a vessel was in the bay, and the bearer, one of the natives, would take them to it. This was given to one of the natives in the first canoe, and Jackey, whom the natives recognised, beckoned and motioned to them to take the note to the camp. In the meantime the Captain and I had determined as soon as the boat could be got ready, to proceed according to Jackey's instructions to the camp. The boat left with our party, and Jackey directed us some distance off in the wake of the canoes, there being nothing but a mangrove swamp on the shore near us. We landed beside of a creek, knee-deep in water, among some mangroves. Here we got out of the boat, Jackey, the Captain, Barrett, and myself,—Tom, the sailor who had accompanied us before, saying he could not go, that he had a bad leg. We were a little disappointed here, but said nothing, and proceeded.

Jackey leading, myself, the Captain, and Barrett following, through a mangrove swamp, for some considerable distance, all well armed. Getting out of the swamp we came upon a beautiful flat, and followed up a creek which Jackey said would lead up to the camp. After getting on (keeping a good look-out) for about two miles, Jackey doubled his pace, and all at once said, with great emphasis, "I see camp." "Well done, Jackey," I think was exclaimed by all of us at the same moment. Jackey, still going on at a sharp pace, stopped for a moment and said, "I not sure, I believe it is hole through tree," and suddenly, with greater excitement than before, he exclaimed, "See, two white fellows sit down, and camp." We were now on one side of the creek: down the creek we went, and up on the other side in double quick time, and a scene presented itself. On the other side of the hill, not two hundred yards from us, were two men sitting down, looking towards us, the tent and fire immediately behind them; and on coming up to them, two of the most pitiable creatures imaginable were sitting down. One had sufficient strength to get up; the other appeared to be like a man in the very last stage of consumption. Alas! alas! they were the only two left of the eight, the remainder having died from starvation. Whilst here we were considering what was best to be done, when natives in great numbers were descried watching our movements. Jackey said, "Doctor," calling me

aside, "now I tell you exactly what to do, you see those black fellows over there," (and in pointing to them I saw a great number, some eight hundred yards away, peeping from behind trees,) "you leave him tent, everything, altogether there, and get the two white fellows down to the boat quick." Jackey was exceedingly energetic, and grave as well. Get away as quick as possible, was resounded by all, but what was to be done—two men almost dead to walk two or three miles. We looked over the tent, asked Carron for what important things there were, and each laid hold of what appeared to be of most value, the Captain taking two sextants, other parties fire-arms, &c., &c. "Come along," again and again Jackey called out, and the Captain too, whilst they were half way down towards the creek, and Barrett and I loaded ourselves. I took a case of seeds, some papers of Carron's, a double gun and pistol, which, together with my own double gun and brace of pistols, thermometer, and my pockets full of powder and shot, was as much as I could manage. Seeing Carron could not get along, I told him to put his hands on my shoulders, and in this way he managed to walk down, as far as nearly through the mangrove swamp, towards the water's edge, when he could not in that way possibly get any further, and Barrett, with his disabled arm, carried him down to the edge of the water. Goddard, the other survivor, was just able to walk down, spoke, and looked exceedingly feeble. They were brought on

board at noon, and attended to according to my instructions. Carron's legs were dreadfully swollen, about three times their natural size, from œdema. In the afternoon both reviving and thanking God for their deliverance. I was for some time afraid of Carron. At ten P.M.—they are both doing well, and, I trust, will be enabled to tell their own tale, which renders it unnecessary for me to write it down here. I told the Captain to proceed direct on to Sydney. Jackey, Carron, and Goddard, and the Captain, stating it would be running too great a risk to go to recover anything from the tent, moreover, with so small a party as the Captain, Jackey, and myself, (Barrett really being unfit to go), and the sailors all refusing to go. I consider the Captain deserves considerable credit for his actions throughout in exerting himself to rescue the survivors.

Dec. 31*st.*—At daylight got under weigh and took our departure from Weymouth Bay for Sydney. Carron and Goddard were some considerable time in getting better; the former being subject to daily fits of ague, &c. &c.

Jan. 11*th*, 1849.—The black native had made his escape during the night, whilst it was raining and blowing hard; we were at this time anchored about one and a-half or two miles from Turtle Reef, and a distance of eight miles from Cape Bedford, the nearest part of the mainland; made search on the reef, but saw no marks of him; a strong current was

making towards Cape Bedford, and he might have taken that direction. Two large sharks were seen about the ship this morning; it is our impression the man can never have reached the land; the black was seen by Parker, on deck, at two A.M., whilst it was thundering, lightening, and raining, but was never seen afterwards.

EXTRACT

FROM the private log of T. BECKFORD SIMPSON, master of the brig "Freak,"* giving an account of her proceedings when employed in searching for the papers, &c., connected with the late Mr. Kennedy's exploring party.

May 2nd, 1849.—In the night fresh breezes from N.E. with rain; at daylight weighed and made sail, the Harbinger in company; shaped a course to pass between Cape Direction and the low sandy island which lies off it; passed close to the latter; I observed the reef extending from the N.E. end further than laid down on the chart; after passing it, and giving Cape Direction a good berth, shaped

* Under contract with the Colonial Government to call (on her way to Port Essington) at Shelburne Bay and Escape River, to ascertain—if possible—the fate of the three men left at the former place, and recover the papers of Mr. Kennedy secreted by Jackey Jackey, who went in the Freak to point out the localities.

a course for Restoration Island. At 9 A.M., dense masses of rain-clouds to the east and north-east. The weather became thick and rainy; shortened sail to the topsails. At 10·30 A.M., the weather clearing a little, saw Restoration and Cape Weymouth; when close to the former we had heavy squalls with rain, which prevented our seeing the land; hove-to with the vessel's head to the N.E.; shortly after the weather clearing a little so as to enable us to see the land, bore up and stood in for Weymouth Bay. The rain now descended in torrents, lowered topsail on the cap, feeling our way cautiously with the lead; finding the water shoaling, anchored in twelve fathoms; at 0·30 P.M., the weather clearing a little, saw Restoration, bearing S.S.E. ½ E., and a small island distant about a mile west.

At 3·30 P.M. fine, and finding we were a long distance out, weighed and ran in under the jib, the Harbinger following our example; as we approached the bottom of the bay the water shoaled gradually, and when the haze lifted Jackey pointed out the hill at the foot of which was the camp where Mr. Kennedy had left eight of the party, and from whence Carron and Goddard had been rescued. We stood into five fathoms, and at 5 P.M. anchored about 1½ miles from the shore; the Harbinger brought up close to us. Made up my mind to visit the camp in the morning, and endeavour to find if there were any papers which might have been left and not destroyed.

May 3rd.—During the night moderate breeze from the south with light showers. At five A.M., Captain Sampson came alongside, he wishing to join our party, and visit the camp. Having well manned and armed the large whaleboat, pulled on shore, and landed at the entrance of a small river, on a little sand patch, the place having been pointed out by Jackey; it was the only clear landing-place I saw. A dense mangrove swamp extended some distance beyond high water mark. We had no sooner landed than the rain fell in torrents, and continued for three hours, so much so that we could not load our guns. It was about high water when we landed, and in the mangrove scrub through which we had to go, the water was nearly up to our waists. We had, therefore, no alternative but to remain patiently until the tide fell, and the rain ceased.

On searching the place where we landed, part of a blanket was found, marked $^{B}_{I}{}^{O}$, a part of a tarpaulin, a piece of canvass, apparently a portion of a tent, and a small tin-dish, with a name scratched on its back. These articles were evidently part of the pillage from the camp. A little way up the creek we found three canoes, very rudely made, with outriggers on both sides. We searched and found some small pieces of iron, which we took, being also pillage from the exploring party. At ten A.M., less rain, got some of our pieces blown off with difficulty, they being drenched with rain.

At eleven A.M., having some of our guns in a state to be trusted, we took to our boats and pulled a short distance up the creek in order to avoid in some measure the crossing of the mangrove swamp. We started, Jackey taking the lead, leaving a party to look after the boats. We walked for a short distance in the mangrove swamp, and came out on an open spot where we found a native camp, which from appearances had been but recently abandoned, the ashes of the fire being still warm: we made a strict search, but found nothing; we proceeded, passed through a small belt of mangroves, and came on an open plain; here Jackey and Tommy being the leading men, saw five natives, about fifty yards from us, planted behind trees, each with a bundle of spears; they were evidently watching us,—Jackey levelled his gun at the nearest, and off they ran and disappeared immediately: Jackey seemed very desirous to shoot them, but I told him not to fire, as I wished to speak to them.

From the recent heavy rain the plain was very nearly knee-deep with water, nearly the whole distance we travelled the water was over our ankles, making walking very fatiguing. After crossing the plain we came to a band of trees and bushes, among them I was surprised to find some very fine banana plants; I observed also a fine specimen of the red cedar, (the only tree I had hitherto seen was the *Melaleuca*;) here we crossed a small creek, and came on fine forest land. After

proceeding some distance, Jackey pointed out the place where the first party camped, and where Mr. Kennedy left the eight men; they subsequently removed to the opposite side of the creek; near this place on a tree was carved in large letters "K. LXXX.," which I suppose meant the eightieth station. On coming to the creek found it running too strong for us to ford it; went along by its side a short distance, and were fortunate to find a tree extending across it, upon which we got over; found the grass as high as our shoulders, crossed a small gully and ascended a slight acclivity, which brought us to the site of the camp; a bare spot of ground indicated the exact locality; this spot was strewed with portions of books, all of a religous or scientific character; found no manuscripts; parts of harness, leather-belts, pieces of cedar boxes in leather covers were also found; one or two tins for carrying water, a camp stool, and part of a table, and piece of a tent pole, the bones, skulls, and part of the feathers of birds, &c.; specimens of natural history, all destroyed. I observed the bones of a horse, and the skull of a dog; a piece of torn calico with a portion of a chart adhering to it was picked up; I thought I could make out the words "River Mitchell" on it. I found among the pieces of books, a portion of Leichhardt's journey overland.

I was some time before I could find the remains of Wall and Niblet, who were the last men that died, and had not been buried, the survivors being

too weak. I placed myself at the camp, and looked about for the likeliest place to which a corpse would be taken under the circumstances. I went down into a small gully, about sixty yards from the camp; under some small bushes, in about two feet of water, I found their bones, two skulls and some of the larger bones, the smaller ones having most probably been washed away by the flood; the bones were all carefully collected and taken on board. From the position in which these bones were found, agreeing with the description given me by Mr. Carron, I feel confident they are the remains of Wall and Niblet.

I was rather surprised to find some cabbage-palm trees growing in the vicinity of the camp; the tops are very nutritious, and would be very desirable for men in a starving state, had they been aware of it. I picked up part of a key belonging to a chronometer. After having a good look round, we returned to the boats, all tired, from our drenching and wading through so much mud and water, and we unfortunately had no provisions of any kind, and had eaten nothing all day. When we pulled to the entrance of the river it was low water, and there was a bank dry outside of us for upwards of half a mile; we had no alternative but to wait until the tide flowed. At half-past three P.M., got on board, hoisted the boat in, and prepared to start in the morning.

May 4th.—At daylight, weighed, with a light

breeze from the southward; steered to give Fair Cape a berth. I observed the entrance of a large river at the north end of Weymouth Bay. At half-past ten A.M., passed Piper's Islands, and steered for Young Island; could not make it out for some time, when we did see it, found it only a small reef above water, not worthy the name of an island; such a misnomer is likely to mislead; hauled up for the reef M. At noon, abreast of Haggerstone Island, steered to give Sir Everard Home's Isles a berth; saw natives on Cape Grenville; hauled in for Sunday Island; the wind light from the eastward; passed Thorpe Point, and hauled in for Round Point. At five P.M., anchored in six fathoms, mud. Bearings at anchor, North Sand Hill, D, (conical hill), S.E. $\frac{1}{2}$ E.; South Wind Hillock, (a saddle hill), S. $\frac{3}{4}$ E.; the remarkable sand-patch, S.W. $\frac{1}{2}$ W.; Jackey's Pudding-pan Hill, W. $\frac{1}{4}$ N. Got the whaleboat and crew ready to start at daylight for Shelburne Bay.

On consulting Jackey about going to the camp where the three men were left, he said it was no use going there; the distance was great, and the country scrubby, and that he was sure if any of the men were alive, they would be on the sea-coast. Dunn, one of the men, told him, if Costigan died, he should come down to the beach directly. I therefore considered all that we could do would be to thoroughly examine the coast with the whaleboat, close in shore, and the brig as near as she prudently could approach.

At daylight despatched the whaleboat, in charge of the second officer, with four seamen, Jackey, and his two companions, with particular orders to keep close to the beach, and to land occasionally, to examine all the native camping places and canoes; to make strict search for anything that might tend to point out the fate of the unfortunate men. At 6·30 A.M. weighed, with a light breeze from the southward, and steered to pass between the Bird and Macarthur Islands; at noon abreast of the latter; P.M., after passing Hannibal Isles, hauled in for the shore, for the purpose of picking up the whaleboat. At 5·30 P.M., having shoaled our water rather suddenly to $3\frac{1}{2}$ fathoms, hard bottom, anchored about a mile off shore. Saw a canoe and a few natives on the beach. Bearings at anchor—Risk Point, S. $\frac{1}{2}$ E.; the centre of the Hannibal Isles, S.E. by E. half E. At eight P.M. the boat returned. The second officer made the following Report:—

"I kept close along the beach all day, landed three times; first, near the creek where the Ariel's boat landed, saw no indication there of Europeans. I landed again some distance further on, where I saw a native camp and a canoe. In the latter I found a leathern pistol holster, marked 34, which Jackey recognised as belonging to the party. Three natives were seen by Jackey, who, on perceiving the boat, ran into the bush. At the third place I landed I saw no indication of men. I

was close to the beach all along, and occasionally fired a musket."

Jackey appears confident that the men left have been killed by the blacks. He said he had hopes of finding Dunn, he being a man that "knew blackfellow well, and used to go along blackfellow."

May 6th.—At daylight sent the boat on shore, manned as before, with instructions to land at the place where I saw natives last night. At 6·30 A.M., weighed and set the topsails to a light breeze from the southward, steered N. by E. $\frac{1}{2}$ E., hauling out a little from the land. At seven hearing a rumbling noise, looked over the vessel's side and saw we were in shoal water, the vessel gradually losing her way, but still continued forging ahead a little; lowered the boat and sounded round, found more water ahead, thirteen and fourteen feet; in shore, about half a cable's length found five and six fathoms; to seaward, eleven and eleven and a half feet. Set the foresail: having a flowing tide the vessel went ahead and deepened our water; after going ahead about two or three ship's lengths touched again slightly, and immediately after got into five and six fathoms. The sea being smooth at the time, and the after part of the keel being the only part of the vessel that touched, she cannot have received any material damage. This shoal appeared to be of small extent, composed of sand and coral; it is not laid down in the chart, but is

very dangerous, not being visible from the mast head. I went aloft after crossing it, and could perceive no indication of shoal water. The bearings I got when on the shoal were, the outer or larger Hannibal Island, S.E. ½ E., the inner one (only a solitary tree visible) S. by E. ½ E.

At eleven A.M. passed Cairncross Island, running under easy sail and keeping as near the shore as prudent to keep the boat in sight. I have given instructions to the officers in charge to make a signal if anything was discovered. At half-past four hauled in for Fern Island; at five anchored under the lee in three fathoms, mud; bearings, the highest part of Fern Island S. by E., the entrance to Escape River, N.W. by W. ½ W., hoisted the recall for the boat, on the return of which the officer reported as follows.

"I ran along close to the shore all day. I landed a little to the southward of Orfordness. We met about thirty natives on the beach, who came up to us without hesitation, and appeared very friendly; they shook hands with all of us, and brought us water. Jackey at first thought he recognised the native who escaped from the Ariel among them; he got a little excited, and wanted to shoot him, when he approached nearer he was satisfied he was not the same individual. At another place where I landed I found part of the lower mast of a vessel about 400 tons, and pieces of wreck; saw no natives or indication of them on the beach."

The schooner seen yesterday remained at anchor, and from the fact of her doing so, I came to the conclusion it could be no other vessel than the Coquette;* seeing her so far from her station, I imagined there was something wrong, or that she had heard the unfortunate termination of the expedition, and was preparing to leave; I determined to communicate with her before proceeding up Escape River; at half-past eight A.M., saw four natives on the beach.

At nine A.M., I left in the whaleboat for the schooner—the small boat employed in watering. At half-past eleven A.M., I boarded the Coquette; Captain Elliott had heard by the Sea Nymph, from Hobart Town, the fate of the expedition, and was about leaving for Sydney. She reported the ship Lord Auckland, from Hobart Town, with horses, having been aground on the X reef for several days; she subsequently got off, and had proceeded on her voyage, not having sustained any very material damage; she had lost four anchors, and the Coquette was going to try to pick them up. Having explained to Captain Elliott my intention of proceeding up the Escape River in the morning, he volunteered to accompany me, and to supply two hands, which enabled me to man my two boats, thus making a most formidable party.

* Which had been sent from Sydney to await the arrival of Kennedy's Expedition at Port Albany, the period for which the Ariel had been chartered for that purpose having expired.

At daylight made preparations for starting. I took the five-oared whaleboat, and the second officer, accompanied by Captain Elliott, went in the small boat, both well armed and manned. At half-past six A.M. we left and ran before a strong breeze from the S.E., and stood in for the entrance of Escape River. At half-past seven hauled in round the south head (Point Shadwell): in crossing the bar, least water three fathoms, the tide being about first quarter spring flood.

After entering the river perceived a bay, with small sandy beaches, one of which Jackey pointed out as the place where Mr. Kennedy first met the hostile natives; from this place we observed some of them launching a canoe for the purpose of speaking us, but as we could not afford to lose either the time or the tide I deferred communicating with them until our return. After steering west about five or six miles, the river began gradually to wind to the northward, and afterwards S.S.E.; the river six or seven miles from the entrance was upwards of a mile in width; both banks were covered by a dense impenetrable mangrove swamp; after the river trended to the southward we had to lower our sail and pull; after pulling some four or five miles the river became gradually narrower. I observed several branches of it trending to the northward and westward; we remained on the southernmost branch, the principal one; as we proceeded on the left hand side of the river we came

to a clear place free of mangroves, the only one we had seen; here we landed, and Jackey pointed it out as the place where Mr. Kennedy had come down on the morning of the day when he was killed; it was here Jackey advised him to abandon the horses and swim the river, about thirty yards wide. Jackey pointed out the tree where he made the horses fast whilst they went down to the river and searched in vain for oysters, they having had nothing to eat all that day.

We again proceeded, the river becoming gradually narrower as we advanced, and the water perfectly fresh. After going about two or three miles, the river became so narrow that our oars could not be used. We were compelled to haul the boats along, against a strong stream, by the over-hanging branches of the trees, frequently coming across fallen trees, over which we had to launch our boats, running the risk of staving them; and again obliged to force them under others. A better spot could not have been selected by the natives for cutting us off, had they been so disposed—a narrow creek, and a dense scrub on either side. We still proceeded till the boats could get no further. We had traced the Escape River to its source—a small fresh water creek. As we advanced the belt of mangroves became thinner. We landed on a clear place, on the right of the creek. We went a short distance inland; saw an extensive plain, with numerous large ant-hills on it, which Jackey knew as the place he

had crossed the day Mr. Kennedy was killed. Jackey went a short distance further to reconnoitre, and presently returned, having perfectly satisfied himself as to our locality.

After making a hasty meal we proceeded, leaving four hands in charge of the boats; we walked some distance across a swamp, still following the course of the creek. In the swamp I saw a great many of the *Nepenthes destillatoria*, or pitcher-plant; they were not exactly of the same description I have seen on the Pellew Islands, and other places; nearly all of them wanted the graceful turn in the stem, for which those elegant plants are so justly celebrated. We traced the creek for nearly a mile, looking out for a crossing place, when Jackey pointed out on the other side the place where he had secreted the saddle-bags. At length we came to a tree which had fallen and formed a kind of bridge, over which we passed with difficulty, and returned to the place where Jackey said the saddle-bags were planted. Jackey then shewed us the place where "horse tumble down creek" after being speared. Some horse-dung was found on the top of the bank close to this place, which confirmed Jackey's statement; he then took us a few yards into the scrub to look for the saddle-bags, and told us to look about for a broken twig, growing over a thick bush; the place was found, but the saddle-bags were gone; on searching under the bush among the leaves, the horizon glass of a sextant was

found, a strong proof that Jackey had hit upon the right place.

Jackey then took us through a dense scrub for some distance, when we came on open swampy ground about half a mile wide; on the opposite side there was more scrub, close to which there were three large ant-hills; Jackey took us up to the centre one, five yards from which poor Kennedy fell; against this ant-hill Jackey placed him when he went after the saddle-bags. Jackey told us to look about for broken spears; some pieces were found; he then took us to a place about sixty yards from the ant-hill, where he put Mr. Kennedy, who then told him not to carry him far. About a quarter of a mile from this place, towards the creek, Jackey pointed out a clear space of ground, near an angle of a very small running stream of fresh water, close to three young pandanus trees, as the place where the unfortunate gentleman died. Jackey had taken him here to wash his wounds and stop the blood. It was here, when poor Kennedy found he was dying, that he gave Jackey instructions about the papers, when Jackey said, "Why do you talk so: you are not going to leave me?"

Jackey then led the way to a dense tea-tree scrub, distant about three or four hundred yards, where he had carried the body and buried it. When we came to the edge of the scrub, Jackey was at a loss where to enter, as he said when he was carrying the corpse he did not look behind—all the objects in

front being nearly alike he did not get a good mark. Into the midst of the scrub we went, divided ourselves and searched in every direction, but could not find the place; Jackey had not made the spot too conspicuous, fearing the blacks might find it, he had only bent down two twigs across each other; the scrub was not very extensive but exceedingly thick.

Jackey led the way to a creek, and pointed out the place where he had crossed. Jackey said, "I threw him down one fellow compass somewhere here." It was immediately found, it was one of Kater's prismatic compasses, the name "Chislett, London," engraved on the back. Jackey then went to a place where he "plant him sextant," but the flood had been over the spot and washed it away. When returning I found the trough for an artificial horizon washed upon the banks of the creek; this had been left with the sextant. Jackey crossed the creek, and found a small wooden bottle of quicksilver in the same place where he had left it.

We returned to the scrub where Mr. Kennedy was buried: when we came to it I placed the party (eleven in number) five yards asunder, and traversed it this way in all directions, but without success. I then took Jackey to the plain where the poor gentleman died, and told him to go towards the scrub in the same manner he did when he was carrying the corpse, and not to look back, which he did, telling me the manner in which he carried it,

and where he shifted it from one shoulder to another. In this manner he entered the scrub, and I have no doubt he took us very near the exact place where the body was buried; we sounded the ground all round with our ramrods, but without success. After taking another good look we reluctantly gave up the search, as the night was rapidly approaching, and returned to the boats.

My opinion is, that the remains of the unfortunate gentleman have not been exhumed; if they had, we should have seen some indication of them; the natives would not have taken the trouble to fill the grave, or take away the bones. The soil where he was buried was of a light sandy nature, and the small mound Jackey rose over the grave had been washed down by the heavy rains. The only clue that gave rise to the supposition that the natives had found the body, was the fact that part of Mr. Kennedy's trowsers was found in the canoe taken by the schooner Ariel. Jackey said there were other trowsers in the saddle-bag, exactly like those he had on at the time of his death. The saddle-bags, there is not the slightest doubt, have been found by the natives. Poor Jackey was very quiet, but felt, and felt deeply, during the day. When pointing out the spot where Mr. Kennedy died, I saw tears in his eyes, and no one could be more indefatigable in searching for the remains. His feelings against the natives were bitter, and had any of them made their appearance at the time, I could hardly have prevented him from shooting them.

When we got back to the boats, we immediately proceeded down the creek, being anxious to get clear of the intricate navigation before dark. We succeeded in getting into the open river with difficulty, the numerous snags and branches of trees in the creek, together with the strong current, requiring great precaution to prevent our boats being stove.

A few yards above the place pointed out by Jackey in the morning, where Mr. Kennedy came down to the river for the purpose of crossing, we found the water very shallow, not ankle deep, right across; had they waited until low water they might have crossed without difficulty; as we pulled down the river we found numerous shoals, our boat constantly grounding; in fact Escape River is not a river, but an estuary, terminating in swamps.

At eleven we arrived at the entrance of the river, where I camped for the night, on a sandy beach not far from Point Shadwell, having determined to examine the native camp at daybreak. Set a watch, but made no fire, as I wanted to take the natives by surprise.

May 9th.—Blowing very hard all night from S. E.; passed a miserable night—the mosquitoes devouring us. At break of day launched our boats and pulled towards the camp where we had seen the natives the day before. Some of the party went along the beach. On arriving at the camp found it had very recently been abandoned; one of Jackey's companions saw one native, who ran into the bush and was seen no more.

I went with Jackey some distance into the bush, he shewed me the place where a native threw a spear at him the day before Mr. Kennedy's death; Jackey fired, but missed him. I forgot to mention that the master of the Coquette had seen a native at Port Albany, who had, apparently, been wounded in the face with large shot, and as he answered the exact description given by Jackey, there is little doubt that he was the same individual mentioned in his statement as shot by him.

We searched the camp, found a small piece of red cloth, which Jackey recognised as part of the lining of Mr. K.'s cloak, also a piece of painted canvass; a canoe on the beach we destroyed. Finding nothing more could be done, we pulled out of the river, and got on board about ten A.M., after a very hard pull against both a head wind and tide.

Found the brig riding very uneasy in consequence of the heavy sea, and as Jackey said the other papers, called by him the small ones, and which I conceive to be the most important, as he was particularly instructed to take them to the Governor, were secreted at the head of another river, about eight miles further to the northward, and finding the vessel could not ride here any longer with safety, I determined, when the tide ceased, to weigh and seek some more secure anchorage.

At half-past twelve P.M. weighed, the Coquette in company, and stood to the northward. At half-

past four hard squalls and heavy rain; rounded the Tree Island Reef and anchored in five fathoms, about one and a half miles from the north end of Albany Island.

I do not intend going into Port Albany, as the tides run very strong there; outside is quite as safe at this season. In the evening went on shore on Albany Island. Saw four or five natives, who knew Captain Elliott; they were very anxious to get biscuit and tobacco. They seem to be the same class of men as those of Port Essington, but the language is, I think, different.

May 10th.—All night blowing hard, and squally. At daylight same weather; no chance of the boat getting to the southward to-day. At ten went on shore, for the purpose of selecting a spot to inter the remains of Messrs. Wall and Niblet. Saw the horse left by the Ariel; he seemed in good condition, but rather shy; no chance, I fear, of catching him. Took some corn and meal in a bucket for him.

At three P.M. the weather rather more moderate. Both vessels got under weigh, and worked close in shore. At 4·30 anchored in three and three-quarters fathoms, mud: Tree Island N.E. by E. half E.; Pile Island W. half S.; north extreme of Albany Island S. by E. half E.; within a short half mile of the shore.

Got all ready for a start in the morning, should the weather be moderate. Should the weather

continue bad, I proposed to Jackey to try the overland route. He said the distance was too great, and the country very bad to travel through; that it would take several days.

May 11th.—All night fresh breeze and squally, at daylight rather more moderate; at half-past six despatched the whale boat, fully manned and armed and provisioned for two days, and Jackey and his two companions. I gave charge of the boat to Mr. Macnate, my chief officer. I did not think there was any necessity to go myself, as Jackey said they were not likely to fall in with any natives. Captain Elliot volunteered his services and accompanied the party. Employed watering ship,—found water very abundant all over Albany Island.

May 12th.—At half-past one P.M. the whaleboat returned, having got the papers, &c., secreted by Jackey in a hollow tree. A rat or some animal had pulled them out of the tree, and they were saturated with water, and I fear nearly destroyed; they consisted of a roll of charts and some memorandum books. The charts with care may be deciphered. The following is Mr. Macnate's statement.

"*May 11th.*—At eight A.M. we rounded Fly Point, set sail and steered S. by W., the boat going about five knots, just laying along the shore. At ten A.M. crossed a bank with only nine feet of water on it, passed a reef about three miles from Fly Point, and half a mile from the shore; from former shoal had three and four fathoms to the entrance of

the river. At half-past eleven A.M. entered the mouth of a river, near the centre of Newcastle Bay; here we lost sight of Albany Island, making the distance from it about fourteen miles; the entrance of this river is about one mile and a half wide; on the northern half of the entrance the water is deep, three fathoms; on the southern side there is a sand bank, nearly dry at low water.

"From the entrance we went S.S.W. five miles, when the river narrowed to about the third of a mile, we had from six to two and a half fathoms all the way in. From here we went into the branch of the river that ran about south, the main river going west. The entrance to the branch is about two cable's-lengths wide, we went in a southerly direction about six miles, when the river narrowed to forty feet; here we landed at half-past three P.M. leaving two hands in charge of the boat, walked about two and a half miles, where Jackey found the papers,—they had been pulled out of the hollow trunk where he had placed them, and were much damaged, being saturated with water. We then went half a mile to where Jackey had camped, to look for a pair of compasses he had left: could not find them, but found a note book that Jackey had been drawing sketches in; from here we went to another camp to look for the compasses, but did not find them. At half-past five came back to the boat and camped for the night; none of us could sleep on account of the mosquitoes and flies, &c.

"At six A.M. started down the river; at eight calm, got into the main river, had breakfast. At half-past eight, a light breeze from the eastward. At eleven passed within half a mile of two native canoes with seven men in each, stood towards them, when they immediately paddled away. At one, rounded Fly Point, and at half-past one got alongside the brig."

May 13th.—Fresh breeze from S.E. and fine all day. At eight A.M. both vessels hoisted the ensign half mast. At three P.M. having put the remains of Messrs. Wall and Niblet in a coffin, left the ship in the two boats with nearly all the ship's crew cleaned, and pulled to the southern end of Albany Island, landed and went up to the highest hill on that part of the island, and on the top, a clear open place, we dug a grave and interred the remains of the unfortunate individuals, Thomas Wall and Charles Niblet, reading the funeral service over them; about ten or twelve natives were present, and we fully explained to them what we were doing, they conducted themselves with propriety while the funeral service was being read. Poor Jackey was much affected, and could not refrain from tears.

The spot I selected is the most conspicuous on the island, and would be an excellent site for the erection of a monument to the memory of the unfortunate men who perished on the late ill-fated expedition.* At

* A tombstone with suitable inscription was afterwards erected by Capt. Stanley, and two young cocoa-nut trees were planted near the grave.

each end of the grave I planted two large bushes, and on the top were placed several large stones. A bottle was suspended over the grave, with a paper in it, stating who was interred, with the date, &c.; and at sunset we returned on board.

I cannot close my extracts without mentioning the exemplary conduct of Jackey Jackey. Since he came on board I have always found him quiet, obliging, and very respectful; when on shore he was very attentive, nothing could abstract him from his object; the sagacity and knowledge he displayed in traversing the trackless wilderness were astonishing; when he found the places he went in search of, he was never flushed with success, but invariably maintained his quiet, unobtrusive behaviour; he was much concerned at not being able to find the remains of his late unfortunate master to whom he was sincerely attached; his two companions* also conducted themselves well, and were very useful on shore.

* Aboriginal blacks of his own tribe.

APPENDIX.

No. I.

COMPARATIVE VOCABULARY

OF

TWO OF THE LANGUAGES OF THE NEIGHBOURHOOD OF CAPE YORK.

A FEW words procured at Cape York and Port Lihou are given in the "Voyage of the Fly," and most of those which I have been able to identify belong to the language spoken by the Kowrarega tribe, inhabiting the Prince of Wales Islands, and frequently visiting Cape York.

For the materials composing the present Kowrarega Vocabulary, I am almost entirely indebted to Mrs. Thomson. Unfortunately, however, her total want of education prevented her from acquiring any idea of the construction of the language; nor could she always be made to understand the meaning of a question—however simple in its form—framed to elicit information on this point. Even by carefully sifting at leisure hours the mass of crude materials obtained from her and written down at each interview, day by day, I did not make sufficient progress in the grammar of the language to enable me to pursue the subject further, until her value as an authority had so far declined that it was prudent to reject it altogether. Nearly all the words originally procured from Mrs. Thomson were

subsequently verified either by herself or by our Kowrarega visitors.

The Gudang Vocabulary was formed at Cape York, and the chief contributor to it was the black named Paida, mentioned in the preceding pages, to whom I latterly was able to make myself tolerably well understood upon most subjects, through the medium of the Kowrarega language, which he knew thoroughly. As several dialects are spoken at this place,* I took care to reject all such words as were not given me expressly as Gudang.

The following rules have been adopted in the Vocabularies.

The vowels are sounded as follows :—

ā as a in hard	ō as o in hole.
a „ a „ hat	o „ o „ not.
ē „ e „ there	ú also u final
	„ oo „ cool
e „ e „ bet	u „ u „ cut
ê French ê	ai „ „ eye
ī „ ee „ eel	ei not represented in
i „ i „ bit	English

G is always hard, as in get; ch soft, as in church.

The letters in italics are sometimes omitted.

The numbers appended to some words point out similarities and derivations.

* Two examples will suffice to shew the differences in the five languages which I have heard spoken at Cape York.

Dog=ing-godinya (Gudang and Yagulle), ngyomo (Kachialaiga), Inyomo (Induyamo), umai (Kowrarega).

Smoke=ekura (Gudang and Induyamo), rong-gura (Yagulle and Kachialaiga), tuo (Kowrarega).

I. NATURAL OBJECTS.*

	English.	Kowrarega.	Gudang.
1	Sky	je	
2	Sun	garīga	inga
3	Cloud	dapar	otēra
4	—— heavy, cumulus	markei	
5	—— driving, scud	ras	
6	Moon	kissuri	aikāna
7	—— new	kainĭdung (634)	kichīa
8	—— full	mullpal	ichāra
9	Moonlight	kapi kissurri (612.6)	
10	Star	titúre	ōnbi, únbi
11	—— falling	titúre údzarĭzhe, (10.745)	
12	—— morning	garīga titúre, (2.10)	

* To form the plural of a noun or adjective, the rule appears to be to add *le* as a postfix, sometimes previously supplying a terminal vowel if required: Ex.—"geta=hand" becomes "getale" in the plural: "kuku=foot, kukule:" "kutai=yam, kutaile:" "ipi=wife, ipile:" "kerne=lad undergoing a certain ceremony, kernele:" "makaow=mat, makaowle:" "bom=fruit of pandanus, bomale." There are exceptions however; "mari=shell ornament," makes "marurre" in the plural: "gul=canoe, gulai;" "tawpei=short, tawpeingh;" all nouns ending in *ra* have the plural in *re*, as "kowra=ear, kowrare" and all ending in *kai* gain *jille* in the plural, as "ipikai=woman, ipikaijille."

Regarding the allusion to a terminal vowel, it may be mentioned here that as most Kowrarega words end in a vowel, its absence when a vowel commences the following word is commonly owing to elision. Ex.—"udzu umai=my dog," becomes "udz'umai." When the last consonant in a word is the same as the first in the following word, one of the letters is omitted. Ex.—"apa pirung=soft ground," becomes "ap'irung." There are numerous other contractions, as "ai" for "aidu=food;" "aiye" for "aiyewel=come here;" "mue utsem=the fire has gone out," for "mue utsimem," &c.

	English.	Kowrarega.	Gudang.
13	Jupiter?	dogei	
14	Pleiades	kúsāli*	
15	Darkness, night	inúr	yúlpălga
16	Shadow, shade	*y*irāda	moda
17	Wind	gúba	alba
18	Rain	ari	apúra
19	Rainbow	oripāra	ung-gebānya
20	Dew	úrma	
21	Fog	wúnu	
22	Thunder	dúyúm*a*	wagêl (526)
23	Lightning	bagum*a*	ōmba
24	Heat, steam	kaman	
25	Sea	wúr	
26	Salt water	adāb*u*	úng-onya
27	——— creek	kassur	
28	——— swamp	gowāda	gawāta
29	Deep water	mal	
30	Shoal water	gata	
31	Wave	baow	
32	Foam	tsīka	
33	High water	wúr púsākuradun (746)	
34	Low water	wúr núrēmĭzinghi	
35	Tide, flood	wúr kamĭzinghi	
36	—— ebb	wúr núrĕzinghi	
37	Salt	. .	? bawa
38	Freshwater	núki	ēpi
39	Spring	dana nuki (443)	
40	Well, hole dug in ground	marama	akānya

* The frequency of words having different meanings may perhaps lead some to suppose that they may have originated in error on my part. Some have a figurative connexion as "upu=a series of water holes, also a blister;" "kusali=the constellation of the Pleiades, also a plant with bunches of seeds which become white and glittering by exposure to the sun:" others have no obvious community of meaning, as "ari=rain, also a louse;" "gi=laughter, also ripe," &c.

	English.	Kowrarega.	Gudang.
41	Stream of fresh water	bubbu	epitāba (38)
42	—— bed of	kassa	artaba
43	Chain of ponds	úpu (529)	
44	Land	laga (370)	
45	Sand, sandy beach	bútu	aigi
46	Island	kowra (455)	unbonya
47	Reef	madji	
48	Flat, plain	bowa	
49	Hill, wooded	pada	pada
50	—— stony	barādi (56)	
51	Ground, soil	apa	ampa
52	Mud	barrudder	
53	Mangrove swamp	tugga	
54	Stone, rock	kúla, kōla	ōlpa
55	Cave, hole in rock	sakai	
56	Any remarkable rock	ādi	
57	Cliff	thi	
58	Sandstone	iba-eba	
59	Quartz	ús	elpōwa
60	Pumice	maat	mêta
61	Ochre, red	parma	anto
62	——— yellow	daōm*a*	
63	Fire, wood	múe	yōko
64	Flame	búyêli	
65	Smoke	tú*o*	ekōra, ekúra
66	Ashes	kúnur	búro-búro
67	Charcoal	búrkēr	ōnta
68	Path	yabu	alka
69	Summer, dry season	aibow	
70	Winter, rainy season	kúki*	adāra

* Also applied to the N.W. wind then prevailing.

	English.	Kowrarega.	Gudang.
71	SpringandAutumn	malgúi	
72	Turtling season	súlangi	

a. Mammalia.

73	Tail of quadruped	kōba	ōpo
74	Bat, large	sapúr	
75	——— young of	kúgi	
76	—— harpy	. .	túmĭdúmi
77	—— small	arārăpa	mali
78	Native cat	. .	kúte
79	Dog	úmai	ing-gŏdīnya
80	Bandicoot	. .	walkundúnya
81	Kangaroo	úsur*	epāma
82	Opossum	barīt	
83	Mouse	makutz	mākutcha
84	Whale	bidu	
85	Dugong	dung-ul*a*	wattei
86	——— tail of	sun-*na* (149)	

b. Birds.

87	Bird, insect, shell, &c.	úre	wúroi
88	Wing	búta	ngāga
89	Tail	kupa-lúba (478)	kōpăgōba
90	Quill	kai-kai	aikúnya, eikúnya
91	Down	palis*sa*	
92	Nest	padăm*a*	untīnya (242)
93	Egg (or of reptile)	kakúr*ú* (499)	achīna (499)
94	Eagle	agăleg	
95	—— quill of	baba† (418)	

* The sounds of *s* and *z* are wanting in Gúdang, and when occurring in a foreign language are represented by *ch* or *ty*. Ex.—The Kowrarega words "usur=kangaroo, makutz=mouse, surka=megapodius, susu=breasts," if pronounced by a Gudang black are rendered by "uchur, makutcha, tyurka, tyu-tyu."

† Literally the "father (of feathers);" it is much prized as an ornament both for the person and to deck graves with.

	English.	Kowrarega.	Gudang.
96	Hawk	. .	kartam
97	Owl	. .	túĭtru
98	Goatsucker	bīya	ngōko
99	Laughing jackass	kowru	unbúnya
100	Kingfisher, long-tailed	. .	quatăwur
101	——— yellow-billed	. .	poditti
102	Swamp pheasant	. .	púra-púra
103	Swift	. .	ebúndyăra
104	Parson-bird, thrush	. .	wêya
105	Bower-bird	. .	yewīnya
106	Dragoon-bird	. .	eipúra
107	Fork-tailed fly-catcher	. .	trokāru
108	Small thrush	. .	chechurri
109	Rifle-bird	. .	yagúnya
110	Starling	. .	múter
111	Wood swallow	. .	kartaquīko
112	Small flycatcher	. .	kōpŏta
113	Sun-bird	. .	terĕdirri
114	Many small birds	. .	inchānya
115	Leather-head	quāko	kākua
116	Black macaw	. .	peüntu
117	Cockatoo	weăm*a*	aira
118	——— crest of	yêl*ai* (493)	
119	Parrot, blue mountain	kêrīss*a*	inbēre
120	——— rosella	. .	wōng-īnya
121	Pigeon, white	gainŏw*a*	gainŏwa
122	——— green	warănīs	bêlbucku
123	Dove, ground	kú-ú-rúg	kúdrōgo
124	—— green	. .	warāba (257)
125	Cassowary of N. Guinea	sam (597)	

	English.	Kowrarega.	Gudang.
126	Emu	. .	nīchulka
127	Brush turkey	raōn	araünya
128	Megapodius	súrka	útēma
129	——— mound of	súrka pada (49)	
130	Quail	. .	gúruru
131	Nativecompanion	apŏrēg*a*	apŏrēga
132	Heron, night	. .	wang-go
133	——— blue	karbai	
134	——— white	krêm	
135	Godwit	. .	kú-urri
136	Sandpiper	. .	tyúri
137	Frigate-bird	. .	owmer
138	Gull	kêki	keake
139	Tern	. .	chāra
140	Teal	. .	ropăgāma
141	White duck	diggi-diggi	

c. Reptiles.

142	Turtle, (general)	wāru	wāru
143	——— soft eggs	oëbāda	
144	——— hawksbill	unāo	
145	——— green	súlur	
146	——— logger-head	úrza	
147	——— small kind	kīdu wāru	
148	——— fore fin	púye	
149	——— hind fin	súna súro (86)	
150	——— belly	atta	
151	——— back	āgu	
152	Tortoiseshell	tōdi	wānăwa
153	Frog	kang-gu	kartăkutta
154	Crocodile	ibāra	
155	Lizard, large	gang-ur*a*	múrúnya
156	——— middle sized	. .	raüntīnya
157	——— small	indyúra	dúdyúrōko

	English.	Kowrarega.	Gudang.
158	Snake, brown	karōmat	kanurra
159	—— black	piröan	
160	—— green	. .	wachi

d. Fishes.

161	Fish	wawpi	wawpi
162	Fin	. .	mêrta
163	Tail	mabi	chana
164	Breast	pêl	
165	Gills	. .	anānăji
166	Shark	beidum	wandi
167	Sting-ray	aōna	wāki
168	*Pelates*	dzāram	
169	*Diacope* 8 *lineata*	tānĭgi	
170	*Scatophagus multifasciatus*	karmoi	tōra
171	*Lethrinus*	djāga, dyāga	
172	Parrot-fish	bīla	úbúru
173	Mullet	pīwer	
174	Whiting (*Silago*)	kōpuru (475 ?)	
175	Flathead		tōbu
176	Fresh water herring	wīla	anbúro
177	Toad-fish	badar (530)	
178	Sucking-fish	gapu	

e. Insects, &c.

179	Crab, blue	kowturri	pāka
180	—— small	gúrba	
181	—— large	getalli	getalla
182	Crayfish	kayer	lang-gúnya
183	Beetle, small	. .	orōna
184	—— water	. .	nēke
185	Humble bee	. .	bōro

	English.	Kowrarega.	Gudang.
186	Honey*	útu	úntēre
187	Wax	yêrka	alpānya
188	Small wasp	gărur	elpīri
189	Ant hill and ant	múgu	mōng-go
190	—— bronzed	dúpu (532)	
191	—— small black	túmi	
192	—— green	músu	eipúnya
193	—— large red	. .	kāgŭda
194	Ant, small, white, wood	. .	bēnje
195	*Cicada*	edyēna	intēre
196	Fly	búli	wampa
197	—— horse (*Hæmatopoda*)	búrúgo	búrōgo
198	Mosquito	īwi	úma, oma
199	Butterfly	. .	têwīnya, tawīnya
200	Grub in dead wood	ōka	etīmunya
201	—— living wood	. .	tōlo
202	Louse	āri (18)	āko
203	Scorpion	īdi-īdi, dīwi	
204	Spider	ēnti	tamburra
205	Worm	kúrtur	

f. SHELLS, &c.

206	Cuttle-fish	sug-gu	
207	Barnacle on turtle	yētu	yētu
208	Clamp-shell (*Tridacna*)	mīya	mīya
209	Cyrena	akúla	ōnti
210	Oyster	īta	úmpēda
211	*Sanguinolaria*	tīki	tēki
212	*Fusus proboscidiferus*	bōa	mābur

* This and the next are made by a small stingless bee which builds its nest in hollow trees.

	English.	Kowrarega.	Gudang.
213	Melon-shell	alōpa	ang-kōwa
214	Murex	. .	wēlŏro
215	Egg cowrie	buboäm	
216	Olive	. .	wārăji
217	Ear-shell	. .	têpur
218	Periwinkle, small	búdi	búdi
219	——— large	. .	yārăwúra
220	Natica	. .	modúl
221	*Auricula Judæ*	. .	ngaanbămēdi
222	Snail, large	. .	têtuka
223	—— small	. .	kēno
224	Coral	yammar (branched)	wardyo-orge (massive)

g. Vegetable Productions.

225	Tree (general term)	prúe	púre
226	Log	watur	
227	Drift wood	bête	
228	Touch wood* and its charcoal	kúbi	
229	Small stick	sarāgi	chêrăgi
230	Bark	púrur	rang-a
231	Branch	mang	
232	Leaf	nissa	etrara
233	Flower	kowsur	erōra
234	Seed	kawp	
235	Root	quĭku (433)	
236	—— of grass	. .	nōntya
237	—— of a tree	. .	yalīda (493 ?)
238	Sea-weed	. .	tāwar
239	—— (food of dugong)	. .	púrāda
240	Mushroom	. .	achāri
241	Fern	. .	ganda

* The charcoal used for painting the body is made from this.

	English.	Kowrarega.	Gudang.
242	Grass	burd*a*	untīnya (92)
243	—— coarse	. .	bagudda
244	Sugar cane	gāru	
245	Bamboo	marapi	mărāpi
246	*Calladium esculentum?*	búa	
247	*Pandanus spiralis*	gāra	búrwa
248	———— cluster of fruit	bom	
249	———— fruit, singly	ābul, abal	
250	———— kernel	ābul dan' (443)	
251	*Pandanus pedunculata*	kowsar	quatyerra
252	Seaforthia palm, large	lúlko	akārĭnya
253	———— small	útu	
254	Caryota palm	. .	damārăba
255	Rattan	kúchi	
256	Cabbage palm (*Corypha*)	múru, mōro	watu (251?)
257	Cocoa nut	urāb*a*	warāb*a*
258	Sago palm of New Guinea	bīsi	
259	White lily (*Crinum*)	? gúrābi	korōbo
260	Banana	. .	katămurra
261	*Hellenia cœrulea**	. .	kêra-kêra
262	Flag (*Philydrum*)	tāgur	dyaimúra
263	Rush	. .	*a*kōmba
264	——? (with edible roots)	. .	rewīno
265	Sedge	. .	opōlga
266	——	. .	gwanda

* The root of this is eaten raw.

	English.	Kowrarega.	Gudang.
267	Yam, wild (*Dioscorea*)	dêrābu	worng-ura
268	—— fibrous, (do.)	kútai	pêrut
269	—— (do.)	dawb	
270	—— (do.)	sowar	
271	—— purple (*Convolvulus ?*)	bīzar	
272	——	sāgu	
273	—— (*Convolvulus ?*)	tāpan	
274	Sweet potato	rúgăbu	
275	Cane (*Flagellaria*)	búji	búdya, bōdya
276	Dracontium	. .	epuānŏma
277	Fig	. .	atāra
278	—— (with large edible fruit)	. .	*ú*gúru
279	——	. .	awida
280	She-oak (*Casuarina*)	gaibur	búrbúra
281	Cotton-tree (*Cochlospermum*)	. .	pāŏtu
282	——— (*Bombax*)	wāpăda, gōguta	wāpăda
283	——— cotton of	. .	māye
284	Water lily (*Nymphæa*)	? rúmbādi	rúmbadi, rōm-[bādi
285	*Wormia alata*	. .	maartitta
286	Cashew nut	dúa	lēăra, līăra
287	*Grevillea*	. .	yuwurra
288	*Parinarium*	wību	*e*lāri
289	Acacia	. .	garragurra
290	Large bean*	kalāpi, kúlāpi	umpīra, umbēra
291	Coral tree (*Erythrina*	. .	pīnura, pēnura

* Eaten with "Biyu,"—the produce of a vine-like climber with legumes a foot in length.

	English.	Kowrarega.	Gudang.
292	*Abrus precatorius*	tīmĭkāpúl	
293	Blue pea-flower	. .	waalkuda
294	*Mimusops Kaukii*	úbur	wōbar
295	Convolvulus (with edible roots)	chawúr	*a*tiar
296	*Vitexmacrophylla*	. .	orōĭda
297	*Avicennia tomentosa ?*	. .	dyang-a
298	*Scævola Kœnigii*	dêla	dyāra
299	Mangrove	taga	te*a*ng-gunya
300	————	. .	korad-da
301	————	kúĭyúr	inchêncheiya
302	————	bīyu	bīyu
303	Tea-tree (*Melaleuca*)	. .	agúra
304	———	úbu, wōbu	unēra
305	———	. .	elēmbi
306	———	. .	adōya, adúya
307	Gum-tree (*Eucalyptus*)	. .	kêru
308	Apple, red (*Eugenia*)	kúai	apīga, apēga
309	—— white (*Eugenia*)	kúpa	bang-gădi
310	Cherry (*Eugenia*)	. .	arōndyi
311	*Sciadophyllum*	. .	lang-gúla
312	Cedar (*Cedrela*)	. .	kerúm
313	Vine (*Cissus*)	. .	mangko
314	Creeper*	wāli	
315	*Heritiera*†	mēker	
316	Tree	passei‡	

* Used in making one kind of fishing line.

† The leaf of this rolled up into a cylinder is used to distend the hole in the lobe of the ear.

‡ Large tree with very light wood used for making outrigger floats and paddles.

	English.	Kowrarega.	Gudang.
317	Tree	. .	ung-kúnya
318	——	sĭrā-sĭrā*	
319	——	kopêr	baguntīnya
320	Resin	yirka†	
321	Bark of which *daje* is made	maë	
322	*Xerotes Banksii*	walchi	nōyo, nōyu
323	Tobacco	sugúb*a*	chōka
324	Wood, hard } used for	. .	ēra
325	—— soft } spears	. .	mang-ga

II. Articles of Foreign Origin.

326	Iron	túrīk*a*	gēre
327	Glass, bottle	talpura	talpura
328	Gun	tarīka	tīda
329	Axe	aga	aga
330	Clothes	dúmawk	dúmawk
331	Hat	. .	wălāpa
332	Knife	gi, gi-turik	

III. Utensils, Ornaments, Weapons, &c.

333	Canoe	gúl	ang-gānya
334	Bow	búa, búai	oïmpa
335	Stern	mēnir	kōna
336	—— ornaments of ‡	. .	koïkŏchúpa
337	Raised gunwale	bada (530)	bada
338	Platform	tāmu	tāmo
339	Netting	sāri	chāri
340	Outrigger poles	tōgo	tōgo
341	—— float	sarīma	charīma

* The bark of this is made into large fishing lines.

† Used in fixing the heads and joints of spears and throwing sticks.

‡ One central and two lateral poles ornamented with streamers and feathers.

	English.	Kowrarega.	Gudang.
342	Outrigger float, pegs of	sarim' pati	
343	Paddle	kărāba	kărāba
344	Mast	rāb*a*	múlgŏburra
345	Poles of sails, &c.	súru	malēla
346	Backstays	búzu	
347	——— gromets on	quêăda	
348	Sail, mat of any kind	rab'wāku (344) wāku	abāra
349	Rope, cable	úro	chichălúro
350	Stone for anchor	yādi	
351	Women's covering	awash	
352	Petticoat	dāje	
353	——— band of	wāk*a*ow	
354	——— small	múe-dāje	
355	——— long	úrge-dāje, tăbōm	
356	Nose-stick	gúba	taiko
357	Round shell ornament*	māri	mêri
358	Small†	dībi-dībi	
359	Necklace of cordage	sogêr	
360	——— reeds	. .	anchi
361	Fillet (gen. term)	quīk'úro (438,349)	
362	—— of mother of pearl	. .	karăkōpo
363	Armlet, bracelet (general)	músúr*i*	pētu
364	——— narrow	. .	ungkīnya
365	——— broad	. .	maiăgu
366	Leg ornaments‡	māka	púăra

* Of the mother of pearl shell—worn by a string round the neck.

† The top of a cone ground flat.

‡ Circular, narrow and twisted—worn round the leg above the calf, from 5 to 30 together.

	English.	Kowrarega.	Gudang.
367	Anklet	dāna-kúk'úro (443, 438, 349)	
368	Any painting on the body	mēnāra	
369	Camp, camping place	múdu	
370	Hut	laga (44)	cikúwa
371	Breakwind of bushes, &c.	maak	baalkulka
372	Basket	lī, lē	akōmi
373	——— water	lúlko (252)	rōlko
374	Sticks for producing fire	salgai	
375	Oven	ammai	yarte
376	Needle (of bone)	sāka	
377	Thread	kētal	
378	Tobacco pipe	súguba-marāpi (323, 245)	marāpi (245)
379	Fishing line	arĭga	
380	Fish-hook	túdi, tōdi (152)	nêang-gunya
381	Stick for digging	pottur	
382	Spear (general)	kalāka	alka (68)
383	—— plain (for fishing)	rāda	ainti
384	—— large, barbed	túna	tōna
385	—— 3 or 4 headed	tāku	tāko
386	Throwing stick	kobai	ekāra
387	Shell handle		atāra
388	Peg at top	kobai piti (386 446)	ekar' eye (386, 446)
389	Dugong peg	kúyúr	
390	——— shaft	wāpu	
391	——— line	āmu	
392	Bow	gugure	
393	Arrow	têrig	
394	Gauntlet	kādīk	kādīk

	English.	Kowrarega.	Gudang.
395	Bamboo knife, large	úpi	
396	——— small	húpi	
397	Cane loop	sringi	
398	Stone-headed club	băgābŏgub	
399	Drum	warúp	warúpa
400	Grave	kāga	
401	Cairn of stones	agu	

IV. Man, Relationship, &c.

402	Man, white, ghost	markai	úmboypu
403	—— black	garkai*	amma
404	—— a	túrkĕkai	unbāmo
405	—— old	ke'túrkĕkai (625 405)	
406	—— young (until married)	kaowquīku (438)	
407	Boy, male child	túrkĕkai kāje (405, 412)	
408	Woman	īpĭkai (431)	úndamo
409	——— old	ke'īpĭkai (625, 408)	
410	——— young, (until married)	nerawkai	
411	Girl, female child	īpĭkai kāje (408 412)	
412	Child	kāje	ang-gōra, ung-kúra
413	Infant	muggi' kaje (647, 412)	
414	Son	nêtúr kaje (412)	
415	Grandchild	nêp	
416	Grandfather	bobāta	bobāta
417	Grandmother	kaiêda	kaiêda

* From this is derived "garkaije," =a tribe, or collection of men, women, and children.

	English.	Kowrarega.	Gudang.
418	Father, (or his brother)	bāba (addressing him)	epāda
419	———	tāti* (speaking of him)	
420	———'s sister	rebāta	
421	Mother (or her sister)	amma (addressing her)	atīnya
422	———	apu (speaking of her)	
423	——— brother	adōămа	
424	Brother, sister	barābatа (if of one sex)	aigŏdīnya elpōwa, intyāra
425	——— addressing them	túkĕap (if of different sexes)	
426	——— eldest	kúkúle	
427	——— second	quīquīg	
428	——— third	dadaig	
429	——— fourth, or youngest	kútaig†	
430	Husband	allai	anba
431	Wife	īpi	onda
432	Father or mother-in-law	īra	
433	Namesake	nattam	
434	Sweetheart	rúgeiga	
435	Friend, associate	keimăgi	
436	Term expressing affection	kawki (if male to female)	
437	——— ———	kami (if female to male)	

* A father and his brothers are equally represented by this word: distinctive appellations according to age are indicated by prefixing the adjectives "ke'=great" and "muggi'=small" to "tati."

† There may be several of this name at one time, distinguished by "ke' and muggi."

V. Parts of Human Body, &c.

	English.	Kowrarega.	Gudang.
438	Head	quīku	pāda
439	—— fore	pār*u*	epúnya
440	—— top of	? quai	
441	—— back of	quātēy*a*	
442	Temples	dāka	aintra
443	Eye	dāna	dāna
444	— lashes	sāmudān*u*	chāmudāna
445	— brow	beibassam	emēri
446	Nose, bill of bird	pīti	ēye
447	Nostrils	ngúrsāk*a*, karābu (55)	eye'pandya (446, 817)
448	Hole in septum	piti-tarte (446, 817)	
449	Mouth	gúda	angka
450	Lips	ira-gúda	angka
451	Tongue	naï, neï	untāra
452	Teeth	dang*a*	ampo, ampu
453	Cheek	bāga	bāga
454	Chin, lower jaws	ību	ēbu
455	Ear	kowra (46)	ewúnya, ewōnya
456	— holes in margin*	kowra tarte (46, 817)	ewúnya' pandya (455, 817)
457	— pendulous portion	múti	
458	Throat	karta	nānu
459	Neck	múdúl	yúro
460	Shoulder	dzōgo	wōndo, wōntu
461	Armpit	narang-i	amúnya, amōnya
462	Upper arm	? údu	ēnta, ēnda
463	Elbow	kúdúlo	yúrtu
464	Fore arm, wrist	údu	têrāpi
465	Hand, finger	gêta	arta

* Minute holes all round the margin of the ear, into which short pieces of stick, grass, &c. are stuck.

	English.	Kowrarega.	Gudang.
466	Hand, back	kal	art'ōnto (465, 476)
467	—— palm	wiër	art'apa (465,477)
468	Thumb	kaba-gêta	
469	Nails (of fingers or toes) & claws of bird	tara	têtur
470	Chest	. .	rōndura
471	Breasts	súsu	yōng-o
472	Nipple	súsu núr (471)	yong' ampo (471, 452)
473	Milk	ikai	
474	Belly	maita	
475	Navel	kúpar	kopurra
476	Back, upper part	kību	ōnto
477	—— lower part		apa
478	Hip	kúpa	opēnya
479	Thigh	kāpi	etēna
480	Popliteal space	. .	ilkānya
481	Knee	kúlu, kōlu	ēng-go
482	Leg, ankle	tirra, ngar	útrōnya
483	—— calf	bru-mādu (508)	
484	Shin bone	bru-rīda (507)	
485	Foot, toes	kúku	oquarra
486	—— upper part	. .	oquar' onto (485, 476)
487	—— sole	saau	oquar' apa (485, 477)
488	Heel	pokōko	omo
489	Toes	. .	dyúro
490	Great toe	kei' kúku (625, 485)	
491	Beard	yêta	yèta
492	Moustache	gúda magêda (449)	yêta
493	Hair of head	yal	ōdye

	English.	Kowrarega.	Gudang.
494	Hair of body	. .	ang-a
495	—— groin	māgĕda	nādul*a*
496	Anus	. .	opīnya
497	Penis	īni	achānya
498	Scrotum	. .	untōnya,ngtōnya
499	Testicles	kakúr*u*	achīna
500	Pudendum	māda	mōn-na
501	Skin	purra	equōra
502	Cicatrices	ús	gúri
503	—— on shoulder	. .	kaimai
504	—— horned, on breast	sădēo	chēdow
505	—— straight do.	. .	rōndro gúri (470, 502)
506	—— on belly	. .	kopur gúri (475, 502)
507	Bone	rīda	atira
508	Flesh	mādu	egōndi
509	Fat	īdi-īdi	bujer
510	Vein	kērēr	kêrur
511	Blood	kúlk*a*	ctyúnya
512	Heart	ngānăkāpo	ēpa
513	Liver	sību	
514	Stomach	wêra	
515	Intestines	akúr	ēlpe
516	Brain	. .	úrúa
517	Skull	. .	pad' atīra (438, 507)
518	Spine	g*a*ru rīda (244, 507)	
519	Collar bone	kālum rida (507)	kānul*u*
520	Lungs	saaka (55)	chāka
521	Saliva	mawcha	agāï
522	Tears	núdi	
523	Perspiration	murrag	
524	Dung	. .	ōn-na

	English.	Kowrarega.	Gudang.
525	Urine	. .	ōmbo
526	Abscess, boil	gaima	ōro
527	Pus	bāgúr	
528	Snot, white of an egg	núrse	
529	Blister	úpu (43)	kodje
530	Sore	bāda (337)	unti, anti
531	Bunions in old people	kowrúta	
532	Ague	dúpu (190)	
533	Toothache	dangakīkīre(452, 635)	

VI.—Pronouns.

534	I, me	ngātu*	ngai	eipāna, yúba
535	Thou, thee	ngīdu	ngī	untōba, dōba
536	He, him	núdu	nüe	
537	She, her	nādu	na	
538	We two, us two	albei		
539	We, us	arri		āku
540	You two	ngīpêl (593)		
541	You	ngī-tāna		
542	They two	pāle		
543	They	tāna		inyāba
544	Me, my	ana†		
545	For myself	ngai-aikêka		
546	For himself	nú'abêpa		

* These two sets of personal pronouns are not used indiscriminately, but the examples of their use which I collected are too few to generalize upon. However, "ngatu" and the three next under it, appear to be used only with a certain class of verbs of which an example is afforded by the sentence "ngatu nudu matumina=I struck him;" and the use of the second set of these pronouns is illustrated by "ngai nue" (not ngatu nudu) mulem', &c.= I told him," &c.

† I do not understand the *exact* meaning of this and the two next, so give an example of each; "ana gamu lupeipa=my body is shaking (or I have the ague:) aikeka mule=tell me: nu'abepa chena wir=give that to him."

	English.	Kowrarega.	Gudang.
547	For ourselves	albi nīpa, arri nīpa	
548	For themselves	pāle nīpa, tane nīpa	
549	Who?	ngādu, nga	
550	Whose?	ngānu	
551	What?	eimi	
552	What? which?	mīda	
553	This	īna	
554	This, these	nabi*ng*	
555	That, those	chêna	nōba
556	Let us two, shall we two?	āba*	
557	Let us, shall we?	alpa†	
558	Mine	ngow (if a male) údzu (if a fem.)	
559	Thine	yīnu	
560	His	núnúe	
561	Her	nānúe	
562	Our (dual)	abāne (566)‡	
563	—— (dual)	albeine (538)§	
564	—— (plural)	arrien	
565	Your (dual)	ngīpeine (540)	
566	—— (plural)	ngītānăman (541) (568)	
567	Their (dual)	pālăman (542)	
568	—— (plural)	tānāman (543)	

* Ex. "aba nudu gasumeipa=let us two seize him."

† Ex. "alpa pongeipa?=shall we sail?"

‡ Includes the person addressed: the mother speaking to the father of their child would say "abane kaje=our child."

§ Excludes the person addressed: in answer to "kaje chena ngipeine?= is that your child?" the father or mother, *both being present*, and one pointing to the other, would say to a third person, "albeine kaje=the child is ours." These forms are Polynesian also as I have since found recorded.

	English.	Kowrarega.	Gudang.
		VI.—Numerals.	
569	One	wārăpúne (580)	*e*pīămana
570	Two	quassur	*e*lābai*u*
571	Three	úquassur - wārăpúne	dāma*
572	Four	uquassur - uquassur	
573	Five	uq.-uq.-warapúne	
574	Six	uq.-war.-uq.-war.	
575	Seven	uq.-war.uq.-war. war.	
576	Eight	uquassur or ipel uquassur repeated 4 times	
		VIII.—Adjectives.†	
577	Afraid	ākan	
578	Alive	dānăleg (443, 804)	anading
579	All, the whole	múro	
580	Another	wāra (569)	inyāna
581	Ashamed	ajīran (823)	

* After careful investigation I am inclined to think that the Gudang blacks have no words to express definite numbers beyond "three." "Dama" is generally used for higher numbers, and occasionally "unora."

† The formation of many adjectives can be clearly traced: in fact, one of the most obvious features of the language—imperfectly as it is understood—is the facility with which many nouns may be converted into either adjectives or verbs. Thus, "mapei=a bite," becomes "mapeile=capable of biting," and is the root of the verb "mapeipa=to bite." The positive adjunct "leg," and its negative "aige" (802, 803), are also used to convert nouns into adjectives: the former follows the same rules as those before given for forming the plural:—"gizu=sharpness," becomes either "gizule=sharp," or "gizuge=blunt," literally, "sharpness possessing, or, possessing not:" from "nuki=water," we get the form "nukile maram=the well contains water," or, "nukegi maram=the well is dry:" "danagi=blind," literally means, "eye possessing not:" as a further example, I may give, "ipikai ajirge wap' ina badale mapeip =the shameless woman eats this sore-producing fish."

	English.	Kowrarega.	Gudang.
582	Bad, ugly	wāte	
583	—— smelling	wāte ganúle(826)	
584	—— tasted	wāte mītale (827)	
585	Bald	gûêle	
586	Bent	balbai	
587	Bitter	têra	
588	Black	kúbi-kúbi thung (228, 629)	
589	Blind	dānăgi (443,804) bēăgi (when addressing one blind	
590	Bloody	kúlkale (511)	
591	Blunt	dúgung, gizúge (824)	
592	Boiling	zúrāna	
593	Both	īpal, īpêl	
594	Blue	māl-tha gamúle (29)	
595	Cold	súmai	
596	Cooked	gīung (641, 629)	
597	Cylindrical	sam (125)	
598	Dead	úma	etōra, etōlma
599	Deaf	wāte kowrāre (582, 455)	
600	Dirty	túmitalle (812)	
601	Drowned	sarúpa	
602	Dry, dried up	wātang	
603	Dumb	keigălein	
604	Faced, pretty	kāpe pārúre(612, 439)	
605	—— ugly	wāte pārúre (582, 439)	
606	Female	madāle (500)	
607	First	kúl	
608	Flat	attang	

	English.	Kowrarega.	Gudang.
609	Flooded	búdăman	ankgēra
610	Forbidden, as food	adzar	
611	Furious, vindictive	kerketale (806)	
612	Good, pretty	kapc	
613	—— perfect	min-na	
614	Gorged	kekêdi	múrko
615	Greedy	úbīle (816)	
616	Green*	nīs-thung (232, 629)	
617	Grey, any light tint	mīăkula	
618	Half, part of	tāpi	
619	Heavy	mapúle (828)	
620	Hollow	múīle (685)	
621	How many?	mīda kúbi (694)	
622	Hungry	werāgi (514)	awōra, awúra
623	Itchy	gāmuji (807?)	
624	Lame	wāte ngarāre (582, 482)	
625	Large, very	kei*nga*†	intōnya
626	Last	wagêl (22)	
627	Left	kīda	etāmuna
628	Light	túrong	
629	Like, the same as	thung‡	
630	Long, high, tall	kúlalle, kotalle	

* There are two forms of each adjective denoting colour, except grey and white. Thus, "black" is rendered either "kubi-kubi thung," or, "kubi-kubi tha gamule," both meaning "like," or, "the colour of" the charcoal procured from "kubi-kubi=touchwood." "Blue, green, and red," are denoted by compounds signifying resemblance to "deep water, a leaf, and blood," respectively.

† Generally used in its contracted form, as "ke" or "kei:" it is also employed as a prefix to denote the superlative degree: thus, "ke' kamanale= very warm."

‡ As an example of one of the modes of using this, I find, "gariga thung= like the sun, or, as bright as if daylight."

	English.	Kowrarega.	Gudang.
631	Male	īnīle (497)	
632	Many, plenty	pútāge, kúbi	
633	Noisy	núrīle (822)	
634	New, little used	kaining	
635	Painful	kīkīre	
636	Pregnant	maităleg (474)	nêtāri
637	Putrid	útzai	
638	Quiet	núrāge (822,804)	
639	Red	kúlk-thung (511, 629)	
640	Right	mīna	mētăgōma
641	Ripe	gi	
642	Rotten, full of holes	. .	opēra
643	Sharp	gizúle (824, 802)	ung-gărung-gărc
644	Short, low	tawpei	
645	Sick	sōka, sāli *	
646	Silent	arāge †	
647	Small, a few, a portion of	mugg*ingh*	embōwa
648	Soft, spongy, swampy	pīrung	
649	Sore-producing	badalle(530,802)	
650	Sorry	wātĕkum	
651	Sour	tērāri	
652	Stony	kúlalle (54, 802)	
653	Sweet-smelling	kāpe ganúle(612, 826)	
654	Sweet-tasted	g'ru tha mitalle (244, 827)	
655	Thirsty	núk' ĕnei (38)	

* These two words appear to have the same meaning, but are used differently : " sok' atchin=sali mizzi," and both express " having been sick."

† " Arage atzir=become silent—hold your tongue."

	English.	Kowrarega.	Gudang.
656	Unable	kārăweg	
657	Unripe, uncooked	kobārīs	
658	Wanton	dānulc	
659	Warm	kāmănalle	imandīnya
660	Wet	úleig, úrge	
661	White	úru	
662	Withered	rāji	
663	Worn, old from use	kúlbang	

IX. Adverbs, &c.

664	Now, immediately	kaibu	
665	Presently, by-and-bye	túma-túma	
666	To-morrow	batteingh	achúnya
667	Two or three days hence	bang-al	ayēre
668	A week (or so) hence	māta bang-al (675)	
669	Yesterday	ngúl	
670	Two or three days ago	kúl	nārăma
671	A week (or so) ago	mata kúl (675)	
672	A long time ago	korrĕkīda*	
673	Quickly	tāri	
674	Slowly	tarēgi (674, 804)	
675	Constantly, always, only, still	māta†	
676	Morning	muggi' batteingh	
677	About noon	kei garīga (625,2)	
678	Afternoon	kút	
679	Hereabouts	kărēki	

* Also denotes duration of time, and is = "for a long time;" it may also be used as an adjective, as, "korrekida gul ina=this is a very old canoe."

† Expresses a continuance of the action: "gul mata pongeipa=the canoe is still under sail."

	English.	Kowrarega.	Gudang.
680	Here	īna*	
681	There	chêna†	
682	Above, upwards	nākăreipa	
683	Below, downwards	mālúpa (29)	
684	—— (a very long way)	kāra mālúpa	
685	Inside	múye	
686	Thus, in this manner	kēda	kēda
687	A long way off	kāpi taig	
688	Near, close to	lōgi	
689	Again	lāka	
690	Completely, into pieces, &c.	palge	
691	Well, much, &c.	purke	
692	Where?	anāga	
693	Why?	mīpa	
694	How, in what manner?	mīda	
695	Yes	wa, ua	ia
696	No	lōng-a, gīúre	untāmo
697	Don't	wan-nur, ‡ maige (804)	
698	Stop! enough!	chīna	
699	Exclamation of surprise	ka! ka! ka!	
700	Exclamation to arrest attention	qualli! qualli! (= I say!)	
701	Exclamation of pity	īgur (= poor thing!)	
702	And §	ia	

* † Both are also pronouns: perhaps, when translated as adverbs, the term equivalent to place is omitted, rendering "ina=(in) this (place)" and "chena =(in) that (place.)"

‡ I suspect, from the termination, that this is the present tense of the imperative mood of some verb="to do, to perform," &c.

§ Ex. "uleip' Aburdia, Salallaia, Wagelia, Mania=Aburde and Salalle and Wagel and Manu are approaching."

English.	Kowrarega.	Gudang.

X.—VERBS.*

703	Word implying motion	ngāpa†	

* After tabulating 100 Kowrarega verbs in all the different forms in which they had occurred to me, I yet failed in arriving at a knowledge of their mode of formation, owing to the deficiency of data on one hand, and the presence of some apparently defective and irregular verbs on the other. Still some of the results are worth recording. Leaving out the consideration of the irregular verbs, I can speak with certainty of only two Moods, the Indicative and the Subjunctive, of the Present and the Past (probably really further divisible) Tenses of the former, and the Present of the latter. As an example I may give the verb "to strike," of which the root is assumed to be "matum =a stroke."

Indicative	Present	nudu	ngatu	matumeipa=I am striking him.
,,	Perfect	,,	,,	matumina=I struck him.
,,	Future	,,	,,	matumeipakai=I shall strike him.
Imperative	Present	,,	ngidu	matumur=strike him.

Assuming a root to each, I find 94 of the verbs under examination to agree in having the present tense of the indicative terminating in *pa*: of these 70 end in *aipa*, 14 in *ipa*, 6 in *epa*, and 1 in *aipa*.

The perfect tense (setting aside some inexplicable irregularities) exhibits a great variety of terminations for the formation of which no rule can yet be given: these are *an*, *ana*, *ani*; *in*, *ina*, *ima*; *em*, *ema*; *eima*, *eiun*; and *un*.

The future tense alone is perfectly regular; it is simply formed by adding *kai* to the present.

The present tense of the imperative mood in those verbs having the present of the indicative ending in *ipa* terminates (with one exception in *i*,) in *ir*: in

† This is a word which from the variety of its modes of application long puzzled me. Careful examination of sentences in which it occurred led to the following results. 1st. It may be used as an independent word to denote motion towards the speaker, the pronoun which would otherwise be required being omitted. Ex.—"adur=go out," but "ngap' adur=come out (towards the speaker)," "lak' ngapa=to come again, to return." 2nd. It is also used as a postfix to denote motion towards the object to which it is joined. Ex.—"laga' p'(ngapa) aiyewel=come to the hut," "mue' pa teir=throw it into the fire." 3rd. It is used in a third sense. Ex.—"wawpi 'pa=to go fishing," "kaba 'pa=to go to a dance." 4th. It is often used as an equivalent to "give me," the hand being held out at the same time. Ex.—"ngapa=let it come to me."

	English.	Kowrarega.	Gudang.
704	Bail	salpúmeipa	
705	Be affected with	ameipa*	
706	Become	atzīpa	
707	Bite	mapeipa	
708	Bore a hole	tartepaleipa (817, 722)	
709	Break (as a stick)	tideipa	atērumbānya
710	—— wind backwards	. .	pēnyăka
711	Build (as a hut)	mideipa (369?)	

the others the terminations of this tense are *ur* (the most frequent); *ar*, (the next in order of frequency) *ara, ari; ada, eada; e, eio, eir, erur;* and *o.*

After all I am inclined to suppose that the Kowrarega verb, although apparently complicated, is of simple construction; and that its various modifications are caused by the mere addition to its root of various particles, the exact meaning of which (with one exception,) is yet unknown. That exception is the particle *aige* or *ge*, (804) the mode of employment of which is shewn by the following examples:—

Wawp' yinu ngai purteipaige=I am not eating your fish.
,, ,, ,, purteiunaige=I did not eat your fish.
,, ,, ,, purteipakaige=I shall not eat your fish.
,, nanu ngi purtaige=Don't eat his fish.

A few examples may be given in illustration of the preceding remarks.

English.	*Present.*	*Past.*	*Future.*	*Imperative.*
Eat	purteipa	purteiun	purteipakai	purtar
Bite	mapeipa	mapana	mapeipakai	mapur
Take away	meipa	mani	meipakai	mari
Tell	mulepa	mulem	mulepakai	muleada
Lie down	yuneipa	yunum	yuneipakai	yunur
Leave behind	yuneipa	yunem	yuneipakai	yunur
Shoot	uteipa	utun	uteipakai	utur
Enter	uteipa	utema	uteipakai	uterur

* Apparently a contraction of "ana" and "meipa." Ex.—"ana kobaki ameipa"=(literally) me cough affects, or I have a cough." The word "mizzi," the exact meaning of which is unknown to me, is also used to express the same thing. Ex.—"quiku kikire ana mizzi=I have a sick head, or a headache."

	English.	Kowrarega.	Gudang.
712	Bury, plant, sow	mārāma*t*eïpa(40, 791)	
713	Call for	túreipa	úntāndurra
714	Carry, hold	ang-eipa	
715	Choose, select	yāpêpa	
716	Climb	wāleipa	oquāgămurra
717	Come here	pateipa, aiye*wêl*	
718	Come, approach	úlceipa	impēbĭno
719	Cook	gīa paleipa (641?)	
720	Copulate	lameipa	crōrúnya
721	Cover over	abeipa	
722	Crush, pound with a stone	pāleipa	akêlgurra
723	Cry, howl like a dog	maicrchīpa	rong-gung-gă-murra
724	Cut	lābaipa	útêdung-gurra
725	Dance	kāba mineipa (811)	unchigulkămurra
726	Die	dādeipa	
727	Dig	pīdeipa	
728	Dive	penneipa	
729	Dream	pīki lalkeipa* (813, 755)	
730	Drink	wanīpa	ung-gên-ga
731	Drown	delúpeipa	
732	Dry up	wāta' pāteipa (602)	
733	Eat	púrteipa, prātīpa	atêdurra
734	Enter (going out of sight)	úteipa	
735	Fall down	púdeipa	
736	Fill (with solids)	wangêpa	
737	—— (with fluids)	māleipa (29)	

* The pronoun "ana" is always used with this. Ex.—"ana piki lalkar =I had a dream."

	English.	Kowrarega.	Gudang.
738	Find	īmeipa	angkānya
739	Finish (men's work)	min' atzīpa (613, 706)	
740	——— (women's work)	palpăgīpa	
741	Fœces, to void	. .	anăbīchúng-ar
742	Forget	kēkŏchīpa	
743	Get up	wīnīpa	amămung-i
744	Give	pībeipa, wiēpa*	útēra
745	Go away	údzarīpa	einpīra
746	Go out, perforate	adeipa	
747	——— (as a fire)	utsīmeipa	
748	Hear, understand	krangīpa	
749	Hide, conceal	muye teïpa (685, 791)	
750	Jump, leap	kātăpulgīpa	ralkă*gămurra*
751	Kick	kúkúna mapeipa (485, 707)	
752	Kill	dadeima mātă-meipa (598, 786)	
753	Laugh	gī walcipa (819)	ung-gărung-gări
754	Leave behind	yúneipa	
755	Lie	lalkeipa (820)	
756	Lie down	yúneipa	
757	Make (men's work)	tātureipa	
758	—— (women's work)	úmeipa	
759	—— a fire	múekēmeipa	
760	Paddle	karāba tapeipa (343, 787)	untyêndyurra

* "Ana" is used with "pibeipa" only; the exact meaning of both is "to bestow, or cause the transfer of ownership;" the actual *handing over* of any thing would be asked for by "ngapa=let it come here," holding out the hand at the same time, but this last may presume merely inspection or temporary use of the article.

	English.	Kowrarega.	Gudang.
761	Pull, drag	yúteipa	
762	Rain	āri púdeipa (18, 735)	
763	Return	mang-ēpa	
764	Rise (as the sun)	dāneipa	
765	Run*	. .	ringa
766	Sail	pōng-eipa	reng-gămurra
767	Scold	īdeipa	inyamung-urra
768	Scrape hands†	gêtapúdeipa(465, 735)	
769	Scratch, pinch	músĭteipa	
770	See, look after, watch	yāweipa	
771	Sew	tarpeipa	bēlkăgur
772	Shake	lúpeipa	
773	Sharpen	gīzu pāleipa(824, 722)	
774	Shave	pīnĭteipa	angkărung-gurra (449, 450)
775	Shoot (with gun or bow)	úteipa	
776	Seize, press, squeeze	gāsumeipa	gīpăburra
777	Sing	sāgúl pīyēpa (818)	
778	Sleep	útē-īpa (825)	erēmadin
779	Smoke	súguba wanīpa (323, 730)	
780	Sit down	tanúreipa	ēngka
781	Speak, tell	múlêpa	ekalkămurra

* In Kowrarega, the action of running is expressed by the adverb "tari = quickly," and the verb "uleipa = to approach:" Ex. "ngapa tari uleipa" expresses quick motion *towards* the speaker, and "tari uleipa" quick motion *from* the speaker.

† A mode of salutation practised throughout Torres Strait, and occasionally at Cape York.

	English.	Kowrarega.	Gudang.
782	Spear, sting	pāgeipa	
783	Stand	kādi (irregular)	
784	Stand up	kādi tanúre (783)	
785	Steal	krāmeipa	
786	Strike	mātumeipa	untōndúnya
787	Swim	tāpeipa	rōlma, rúlma
788	Take away	meipa	
789	Tear	lādeipa	
790	Thirst	núkĭneipa (655)	
791	Throw into	teīpa	umpānya
792	Tie	kúnúmeipa	
793	Touch	tāreipa	abēang-gang-urra
794	Turn over	tarteipa	
795	Unloose, untie	īdeipa	
796	Waken	wêlmeipa	
797	Wash	garwulgeipa	
798	Water, make	ing-uje (irregular)	
799	Wound	úmalĭza matumeipa (598,786)	
800	Wrap round, coil, twist	núreipa	

XI.—Miscellaneous.

801	Affix expressing article spoken of	dza*
802	—— possession	leg†
803	————	ki‡

* Ex. "Nabi'dza = this thing."

† "Leg" or "le," is to be possessed of, and, when used independently, is placed after the noun which it refers to: "ngai 'quassur daje leg = I have two petticoats;" "ngi kutai leg? = have you (any) yams?"

‡ The meaning of this is to a certain extent doubtful; however it enforces an affirmation: Ex. "ina muggi' ki = this is *very* little:" it is frequently used after pronouns: Ex. "arri ki kabapakai = we *shall* go to the dance."

	English.	Kowrarega.	Gudang.
804	Affix of negation	aige*	
805	Any small article	zāpu (fish-hook, &c.)	
806	Anger, rage	kêrkêt	
807	Body of any creature	gāmu	
808	Cold	súmein	ekanba (? to shiver)
809	Cough	kobāki	úlgēne
810	Crack	pīs	
811	Dance	kāb*a*	
812	Dirt	túmit	
813	Dream	pīki	
814	Dust in the eye	. .	lopīcha
815	Food	aidu†	
816	Greediness	úbi	
817	Hole	tarte	ăpāndya
818	Joke	sagúl	
819	Laughter	gī (641)	
820	Lie	lalkai	
821	Name	nêl	
822	Noise	núr	
823	Shame	ājir	
824	Sharpness	gīzu	
825	Sleep	úte	
826	Smell	gānu	
827	Taste	mīt*a*	
828	Weight	māpu	

* Being the negative of "leg," or "le," as formerly stated, "aige," or "ge" = to have not: Ex. "ngai kalak' aige = I have no spears;" "nga ajir'ge = she has no shame."

† As examples of various forms of this word, I may give, "ana pibur aidu = give me (some) food:" "ina aio? = is this eatable?" "ai = it is eatable."

XII.—Names of Persons.

English.	Kowrarega.	Gudang.
Males, No. 1	Pīăquai	Paida
2	Mānu	Túmăgúgu
3	Wagel (626)	Wāga
4	Sălalle	Kúri
5	Bōrúto	Chāmĭda (444)
6	Gābúa	Púrōma
Females, No. 1	Aburde	Mamulla
2	Seibai	Ganulle
3	Yêza	Baki

Native Names of Places in Torres Strait and Neighbourhood of Cape York.

Mount Adolphus Island	Mōrĭlaga
——————— Hill	Begunkutche
Small island to northward	Quīquīchāga
Island N.W. from Mount Adolphus, larger	Wagilwāne
——————————————— smaller	Búdye
Rock S.E. from do.	Akōïne
Rock "a"	Kōlapītchum
The Brothers	Kúrōbi
North Brother	Tārakar
Albany Island	Pābaju
——————— north point	Tarung-i
Bush Island	Marte
Tree Island	Moëbămunne
N.E. Point of Albany Island	Tolodīnya
Albany Rock	Manurre
——————— islet E. by S.	Takunya
——————— —— S.E.	Eikōa
York Island (Cape York)	Wamĭlag
Eborac Island	Dyāra
Mount Bremer	Chārua
Evans Point	Māodīnya

Sextant Rock	Dêlua
Beach at Evans Bay	Podāga
Bramble Hill	Dúyemil-pad*a*
S.E. point of Evans Bay	Chechúri
Ida Island	Robúmo
Beach E. from Mew River	Paiēra
——————————— hill behind	Pochīnya
Bishop Point	Quālulga
Osnaburg Point	Kālalurri
Beach W. from Cape York	Eintrang-o
Islet W. by S.	Purang-i
Peak Point	Karubowra
Possession Island	Bêdanug
Woody Island, larger	Kei' Yellubi
——————— smaller	Muggi' Yellubi
Entrance Island	Júna
——————— islet to N.W.	Chēruko
——————— ——— W.S.W.	Pīp*a*
Islet on E. side of Port Lihou	Tārilug
Islet off Port Lihou	Dumărălug
W. Prince of Wales Island	Múralug
Cape Cornwall and neighbourhood	Morurpure
Beach on W. side of Port Lihou	Daäk*a*
Creek opposite Pip*a* and vicinity	Yêt
Beach on N.E. side of Muralug	Marīn
Thursday Island	Gēalug
Black Rock	Gi'ōmanalug
Green Island	Pīwer
Goode Island	Peilalug
——————— rocks on reef near this	Ipīle
Hammond Island	Keirīri
——————— Rock	Adi
Friday Island	Weibēne
E. Prince of Wales Island	Nārupai
Horned Hill	Dyúgubai
Wednesday Island	Mowrurra
Strait Island, larger	Kei Kúdulug

Strait Island, smaller	Muggi Kúdulug
Travers Island	Múkúnaba
Double Island	Nellgi
Mount Ernest	Nāgīr
———————— islet next this	Pīnakār
Pole Island	Getullai
Burke Island	Suarāji
Banks Island, high portion	Múa
———— ——— low	Ita
Mulgrave Island	Bādu
Hawkesbury Island	Warāra
Tobin, or North Possession Island	Kúlbi
Sue Island	Wāraber
Murray Island, largest	Mêr
———————— middle	Dowar
———————— smallest	Wāyer
Darnley Island	Errúb
Nepean Island	Eddugōr
Stephens Island	Ugār
Campbell Island	Zapkêr
Dalrymple Island	Dzāmúd
Keats Island	Umāgur
York Island, larger	Massīd
———————— smaller	Kúdāla
Bourke Isles, westernmost	Owrīd
———————— northernmost	Púrēm

No. II.

COMPARATIVE VOCABULARY

OF

THREE OF THE LANGUAGES OF THE SOUTH-EAST COAST OF NEW GUINEA AND THE LOUISIADE ARCHIPELAGO.

The materials composing the following Vocabulary are arranged in three columns, according to the localities where they were obtained.

I. Redscar Bay (on the S.E. coast of New Guinea, in lat. 9° 17′ S. and long. 146° 53′ E.), and its neighbourhood.

II. Brumer Island (on the S.E. coast of New Guinea, in lat. 10° 45′ S. and long. 150° 22′ E.), and its neighbourhood; also Dufaure Island (about 40 miles to the westward). When the same word was given at both these places, I have indicated this circumstance by the letter *b* placed after the word; those procured at Dufaure Island only are marked by the letter D.

III. Brierly Island (Louisiade Archipelago, in lat. 11° 20′ S. and long. 153° 9′ E.); also a few words, distinguished by the letter D, procured at the Duchâteau Isles from natives of some neighbouring islands of the Calvados Group.

English.	Redscar Bay.	Brumer Islands.	Louisiade.
		I. Natural Objects.	
Sky	. . .	garewa	buru-buru
Sun	diina*	mahana (*b*)	parai, parei
Cloud	. . .	budi-budi	
Moon	. . .	nowarai	
Wind	. . .	. . .	wiego
Salt-water	dawara,davara	arita (*b*)	soga
Surf	. . .	bagodu	
Fresh-water	ranu	goila (*b*)	wawei (D)
Sand	. . .	gera-gera	kera-kera
Earth	. . .	batan	
Stone, rock	nati	weu, veu (*b*)	pak
Cliff	. . .	padi-padi	
Quartz	. . .	karitao	
Obsidian	. . .	nabu*ka* (*b*)	
Fire	lahi, rahi	kaiwa (*b*)	hiwo
		a. Mammalia.	
Tail (of a dog)	. . .	derena	
Dog	sisia	wanuhe, daiasi	geiwo
Pig	buroma	tuana, bawa (D)	bobo
Opossum (*Cuscus*)	mowra, bowra		
		b. Birds.	
Bird	. . .	. . .	maan
Wing	. . .	mabena, pepena	
Bill	. . .	esuna, kawana	
Feather	iduar	daguri	sao-sa
Hornbill	pawporo		

* Since reading Dr. Latham's remarks, I am inclined to suppose that in this vocabulary the common termination *na* is often no part of the word, but merely a contraction of the relative pronoun = this (is).

English.	Redscar Bay.	Brumer Islands.	Louisiade.
White cockatoo	karai	rorowa	
Nicobar pigeon	. . .	korauto	
Cassowary	. . .	tyuaburo	
Noddy	. . .	maga	

c. Reptiles.

Green turtle	matabudi	wawnu	
Eggs	momo		
Shell	nakeme		
Hind flipper	ai		
Tortoise-shell	kipore, gebore	koma-koma	
Large lizard	. . .	makara	
Water-snake	. . .	mata	

d. Fishes.

Fish	. . .	yama	yeimai
Bone	. . .	. . .	bebai
Fry of a *Caranx*	. . .	. . .	muwota
Mailed-perch	. . .	beirawa	

e. Insects, &c.

Sand-crab (*Ocypoda*)	. . .	gagaruki	
Small crab (*Grapsus, &c.*)	. . .	karagi	wallo-quallo
Fly	. . .	wuro-uro	
Butterfly	. . .	bebi	bebi (=moth)

f. Shells, &c.

Cuttle-fish bone	. . .	. . .	weinaga
Nautilus	. . .	were-werigwa	
Ear-shell	. . .	woka-woka	
Snail	. . .	niu-nu	
Scarabus	. . .	wadiwa	

English.	Redscar Bay.	Brumer Islands.	Louisiade.
Small cowrie	. . .	. . .	dinga-dinga
——————— white	. . .	mawto	
Egg-cowrie	lokol	dunari (*b*), dunai	du-ong-a
Cypræa Mauritiana	. . .	guna	
Arca	. . .	. . .	emoyamo
Cyrena	keva	kiwai	
Cockle	. . .	. . .	kasepin
Donax	. . .	bogadob (D)	
Pearl-oyster	meili	kepo, immaro	kepo
Barnacle	. . .	. . .	tuwaraga
Coral	. . .	puduri, buduri	sangoken = branched

g.—Vegetable Productions.

Wood	au	kaiwa	hiwo
Charcoal, black paint	uma	dum	
Leaf	. . .	. . .	taiyu = yam leaf
Grass	. . .	yawa-yawada	wirmwir
Sea-weed	. . .	. . .	baan
Tree	. . .	madyu	
Scented-herb	mura-mura	mura (*b*), ka-mura	
Yellow-flowered plant	. . .	. . .	tao-ta
Erythrina Indica	. . .	yowra	
Casuarina	. . .	. . .	dai
Mangrove	. . .	. . .	tu-onga
Cocoa-nut and tree	niu	niu (*b*)	pogia, niu (D)
Pandanus	. . .	duya	elegeli

English.	Redscar Bay.	Brumer Islands.	Louisiade.
Areca-nut	. . .	beda (*b*)	ereka
Banana	ani	kassaig, betu and beta (D)	pai-pai (D)
Bread-fruit	. . .	kunune	
Calladium esculentum?	. . .	abaiya	piya = plant, poya = tuber, pihia (D)
Yam	. . .	quateya	daha
Nodulated tuber	. . .	. . .	saiwe
Small yam-like tuber	. . .	nare	
Betel pepper	. . .	gugu, rugu = fruit, peipai = leaf (D)	
Mango	waiwai	gishoa	
Yellow plum	. . .	baowyobi	
Fig	. . .	baware	
Sugar-cane	. . .	garu	mon-mon (D)
Ginger	. . .	monewa	
Amaranth	. . .	popori	
Flax	. . .	yimo*ne*, taoe (D)	

II.—Articles of Foreign Origin.

Iron	. . .	ropo-ropo (*b*)	kellumai
Clothing	. . .	quama	

III.—Utensils, Ornaments, Weapons, &c.

Catamaran	. . .	daow, raow	
——— lashing	. . .	owisu	
Canoe	wanagi	waga (*b*)	waga
Bow	kura-kuro	. . .	hebagi
Figure-head	. . .	. . .	tabura

English.	Redscar Bay.	Brumer Islands.	Louisiade.
End-board	. . .	. . .	baragai, baragaiwi (D)
Stern	tareiya	. . .	waga-pakena
Sides	. . .	. . .	badai, badaha (D)
Outrigger float	darima	sarima (D)	sama
Diagonal supports	. . .	tuturi (D)	patuma
Outrigger poles	ilava	sai-ira, and saeya (D)	maga, hemaga (D)
Lashing of poles	. . .	mamadi (D) (twisted)	wari (plain)
Pole along gunwale	eiwara		
Platform	. . .	. . .	piri-piritele
Mast	aiwar (= masts)	. . .	mamarang
Poles supporting mast	. . .	. . .	tuowo, towa (D)
Sticks across sail	. . .	. . .	pokiwi
Sail	geda	doro	badiara, tun (D)
Rope (of bark)	panaow	barrai, barawara (D)	baiawa
Streamers of pandanus leaf	. . .	. . .	kevara
Paddle	hawte, hawta	wosi, reha (D)	patoma and lewa (D)
Bailer, wooden	dihu	aruma	
—— shell	. . .	heko = ? melon shell (D)	
Hut	mahuta	maia	yuma
Posts	. . .	. . .	kawkola
Shelves on posts	. . .	. . .	gaga-gila
Wooden pillow	. . .	unua (D)	

English.	Redscar Bay.	Brumer Islands.	Louisiade.
Earthen pot	uro	gudawa	uya
——— saucer	nau		
Netted bag	vaina	hiwa	
Basket, round	. . .	kira-kira (*b*)	
——— small	. . .	. . .	nabo
Petticoat	erua	noge (*b*)	
Breech-cloth, mat	. . .	daam	
Cloth of bark	. . .	watu	
Girdle, common	siehi (of tapa cloth)	turi-turi, toru	
——— rattan	. . .	barikue, ue (D)	
Comb	tuari	suari (*b*)	sugo
Nose-stick	mukora	wanipa	bubusi-yana
Ear-ring	. . .	kurata*na* (*b*)	puritana
Plug in lobe of ear	. . .	beya	batiwan
Queue	. . .	doyo	
Armlet, woven	kaana	sia-sia, hari-ma*ni* (*b*)	
——— shell, solid	. . .	akassi	hiwe = *Trochus niloticus*
——— —— of 3 pieces	. . .	popo (*b*)	
——— rattan	. . .	wewessi	
Breast ornament No. 1	kawko		
———, No. 2	koiyu		
Necklace of small seeds	. . .	digo-digo*ta*	
——— of black seeds	. . .	ganogar, gudu-gudu (*b*)	
——— of dog's teeth	. . .	gugadoi	
——— of teeth and seeds	. . .	moka-moka	

English.	Redscar Bay.	Brumer Islands.	Louisiade,
Paint, black	. . .	garoka, garoa	
—— red	pai-ira	sabe	
Lime for betel-chewing	. : .	harigyu (*b*)	hawi
Spatula	. . .	gahi	giang
Bamboo knife	katiwa		
Stone-headed axe	. . .	kiram (also green jade)	kelam*
Fish-hook	. . .	aowri (*b*)	
Seine	. . .	nine, tine	puakan
Floats	. . .	uyawa	kuoto
Wooden sword	. . .	kerepa (*b*)	kirapa
Snout of saw-fish	. . .	gari-gari	
Shield	. . .	rigoane	
Club, wooden	. . .	putu-putu	
—— stone-headed	kahi		
Spear of any kind	iyu		
—— fishing	. . .	*k*ari	
—— plain	. . .	. . .	hemera
—— polished	. . .	wawmerri	wama,manutu
—— sword-pointed	. . .	arahia	
—— bamboo	. . .	. . .	didib (?=bamboo
Bow	pewa		
Arrow	diba		
Drum	. . .	baiatu,boyatu (D)	
Conch	. . .	wage (*Cassis* or *Triton*)	
Pandean pipes	. . .	wererri	
Musical reed	. . .	bogigi	

* Also the stone which heads it—probably the origin of kelumai, understood to mean iron, or any iron implement, as an axe.

English.	Redscar Bay.	Brumer Islands.	Louisiade.
	IV. Man, Relationship, &c.		
Man	tau	tau	
Woman	ahine	sinadaow	daina,winakao
Father	? tama	sibawa	
Mother	. . .	? bode	
Brother	. . .	boe, ? nigerra	
Sister	. . .	wadaiya	
Son	? natu	? yowboe	
Child, boy	mero		
Friend, adopted brother	. . .	damagai	
	V. Parts of Human Body, &c.		
Head	quara		
Forehead	bagu	debada (*b*)	debada
Top of head	tubua		
Back of head	ketu		
Temples	abati		
Eye	mata	matada	matara
Eyelashes	auna,mata-una	matasinowa	matara pulupulura
Eyebrow	bunimata	baia	
Nose	udu	ishu*da* (*b*)	bubusi, bushuda (D)
Nostril	. . . . .		bushuda - goina
Mouth	mao		
Lips	pipina	sopada (*b*)	sepada
Tongue	mala	mimena*da*,manada (D)	mimiada
Teeth	isi	makada, mokada (*b*)	yingeda, yingida, nenin and nini (D)

English	Redscar Bay.	Brumer Islands.	Louisiade.
Cheek	metá	paparida	yamada
Chin	ate	laiagaiada	sewelida
Ear	taiya	beada*wa*, teinada (D)	batida
Throat	kato	*gara*garoda	dumuada
Back of neck	. . .	omda	
Shoulder	paga	debear*uda*, daharada (D)	nemada
Armpit	. . .	. . .	chigirida
Upper arm	howow	. . .	nemada
Elbow	diu	mimassiu*da*, nimasiuda (D)	nemurrapupli, paokona
Fore-arm	ima	monaga=arm	nemada
Hand		nimada	nemada
—— back of	. . .	murina	
—— palm of	. . .	karokarona	
Finger	dodori, wakiri	nimada gigida; nima garada (D)	nemadagigina; nima gigina (D)
——— little	pakeriga		
Thumb	chinapata, sinabadu		
Nails	kau	gibuda, nima gibuda (D)	kapuruna
Sides	. . .	. . .	diyuda=?ribs
Breasts	rata	. . .	pididida (in man)
Nipple		susuga, tyutyuda	
Belly	. . .	bogada	kineida
Navel	hudu	poasida	pusuana
Back	. . .	dagear*ada*	muida, muina
Hip	. . .	piya	pampada, uripunana

English.	Redscar Bay.	Brumer Islands.	Louisiade.
Thigh	mamu	gotuda	
Knee	tui	turi*da*	paoko
Leg and ankle	dok		
—— calf of	. . .	kaibira, haibira	
Foot	. . .	kaida, goguda (D)	gegeda
Heel	. . .	. . .	ujuna
Beard	. . .	garagara*da* (*b*), gagaeda	baas
Hair of head	hui	*k*uru*da* (*b*)	huluda
Penis	usi		
Scrotum	abu		
Pudendum	konu		
Tatooing	kerawera, kevareva	yatu*ya*, kurikuri, and kurimani (D)	
Blood	. . .	. . .	madibana
Collar-bone	. . .	. . .	bongida
Jaw-bone	. . .	. . .	sewe
Saliva	kanudi	. . .	walahai
Dung	nian	. . .	tai
Boil	. . .	bonu	
Leprosy	. . .	warilya (D)	

VI. Pronoun.

This	ena	aena, aina	

VII. Numerals.

One	owtamona, ta	teya (*b*)	paihetia*
Two	owrua, rua	labui (*b*)	pahiwo

* The numerals procured at the Duchâteau Isles in January, 1850, are very diffe rent:

One = etega	Three = eton	Five = nemara-panu
Two = erua	Four = epate	Ten = erute.

English.	Redscar Bay.	Brumer Islands.	Louisiade.
Three	owtoi, toi	haiyona (*b*)	paihetuan
Four	owhani, hani	haasi (*b*)	paihepak
Five	owima, ima	harigigi (*b*)	paihelima
Six	owtaratoi, towratoi	h.—karimoga	paihewona
Seven	owkuta, hitu	h.-labui	paikepik
Eight	owtarahani, towrahani	h.-haiyona	paihewan
Nine	owsa, taa	h.-haasi	paihesiwo
Ten	adarata, wauta	saorudoi (*b*)	paiheawata
Eleven	. . .	. . .	p.-paihetia
Twelve	. . .	. . .	p.-pahiwo
Fifteen	. . .	s.-harigigi	
Nineteen	. . .	s.-h-haasi	p.-paihesiwo
Twenty	——— ruahui	taoi-mate	
Twenty-five	. . .	talabushi-mate	
Thirty	——— toyahui	towkarimoga-mate	
Thirty-one	. . .	t.-m.-karimoga	

VIII. Adjectives.

Another	. . .	*n*essao (*b*)	
More	patana	sagu	

IX. Adverbs, &c.

Yes	. . .	ewa	
No, I have not, will not	. . .	nige	
— I won't, don't!	laas*i*	bes*i* (*b*)	
Presently, by and bye	. . .	tabu (*b*)	tabu
Exclamations of surprise and astonishment	. . .	ao-o-o	
	. . .	dim-dim	

English.	Redscar Bay.	Brumer Islands.	Louisiade.
	X. Verbs.		
Break (a stick)	udumuan		
Come away	. . .	kurhama (D)	
Cough	huwa	oso (D)	keli-keli
Cry	tai		
Dive	hetai		
Eat, eat it	. . .	oquai	
Give, give me	mahi	ureama (*b*)	
Go away, go back	. . .	. . .	tadubi
Laugh	kiri	tanuwaraha	
Paddle	oawde	ow-wassi (*b*)	
Rise up	. . .	kotoro	
Sing	. . .	pediri (D)	
Sit down	. . .	kumturi	
Sleep	mahuta		
Sneeze	. . .	tatino (D)	
Strike (with fist)	hela		
Swim	nahu		
Whistle	. . .	ino	
	XI. Miscellaneous.		
Expressing friendship	. . .	magasugo (*b*)	
This is called	. . .	taina esana	
	XII. Names of Persons.		
Males, No. 1.	Woro	Ihara	Wadai
—— — 2.	Iripa	Nubaida	Maho
—— — 3.	Kari (father and son)	Tubuda	Hewawo
——, — 4.	Baguya	Eratao	Mao
Females, No. 1.	. . .	Lataoma, Konaia (D)	

English.	Redscar Bay.	Brumer Islands.	Louisiade.
Females, No. 2.	. . .	Narumai, Tatarai (D)	
——— — 3.	. . .	Haraobi, Bonarua (D)	
——— — 4.	. . .	Perodi	
——— — 5.	. . .	Gubetta	

No. III.

REMARKS ON THE VOCABULARIES

OF THE

VOYAGE OF THE RATTLESNAKE.

BY R. G. LATHAM, M.D.

In the way of comparative philology the most important part of the Grammar of the Australian languages is, generally, the Pronoun. That of the Kowrarega language will, therefore, be the first point investigated.

In the tongues of the Indo-European class the personal pronouns are pre-eminently constant, *i.e.*, they agree in languages which, in many other points, differ. How thoroughly the sound of *m* runs through the Gothic, Slavonic, and Iranian tongues as the sign of the pronoun of the first person singular, in the oblique cases; how regularly a modification of *t, s,* or *th,* appears in such words as *tu, συ, thou,* &c.! Now this *constancy* of the Pronoun exists in most languages; but not in an equally palpable and

manifest form. It is disguised in several ways. Sometimes, as in the Indo-European tongues, there is one root for the nominative and one for the oblique cases; sometimes the same form, as in the Finlandic, runs through the whole declension; sometimes, as when we say *you* for *thou* in English, one *number* is substituted for another; and sometimes, as when the German says *sie* for *thou*, a change of the person is made as well. When languages are known in detail, these complications can be guarded against; but where the tongue is but imperfectly exhibited a special analysis becomes requisite.

Generally, the first person is more constant than the second, and the second than the third; indeed, the third is frequently no true personal pronoun at all, but a demonstrative employed to express the person or thing spoken of as the agent or object to a verb. Now, as there are frequently more demonstratives than one which can be used in a personal sense, two languages may be, in reality, very closely allied, though their personal pronouns of the third person differ. Thus the Latin *ego*=εγω; but the Latin *hic* and *ille* by no means correspond in form with ὁς, ἀυτο, and ἔκεινος. This must prepare us for not expecting a greater amount of resemblance between the Australian personal pronouns than really exists.

Beginning with the most inconstant of the three pronouns, viz., that of the third person, we find in the Kowrarega the following forms:—

3.

Singular, masculine	*nu-du=he, him.*
——— feminine	*na-du=she, her.*
Dual, common . .	*pale=they two, them two.*
Plural, ——— . .	*tana=they, them.*

In the two first of these forms the *du* is no part of the root, but an affix, since the Gudang gives us the simpler

forms *nue* and *na*. *Pale*, the dual form, occurs in the Western Australian, the New South Wales, the South Australian, and the Parnkalla as follows: *boola, bulo-ara, purl-a, pudlanbi=they two.*

2.

Singular	*ngi-du=thou, thee.*
Dual	*ngi-pel=ye two, you two.*
Plural	*ngi-tana=ye, you.*

Here the root is limited to the syllable *ngi*, as shewn not less by the forms *ngi-pel*, and *ngi-tana*, than by the simple Gudang *ngi=thou*.

Ngi, expressive of the second person, is common in Australia: *ngi-nnee, ngi-ntou, ni-nna, ngi-nte*=thou, thee, in the W. Australian, N. S. Wales, Parnkalla, and Encounter Bay dialects.

Ngi-pel is probably *thou+pair; a priori* this is a likely way of forming a dual. As to the reasons *a posteriori* they are not to be drawn wholly from the Kowrarega tongue itself. Here the word for two is not *pel* but *quassur*. But let us look further. The root *p-l*, or a modification of it,=*two* in the following dialects; as well as in the Parnkalla and others: *pur-laityc, poolette, par-koolo, bull-a*, in the Adelaide, Boraipar, Yak-kumban, and Murrumbidgee. That it may stand too for the dual personal pronoun is shewn in the first of these tongues; since in the Adelaide language *purla=ye two*. Finally, its appearance amongst the pronouns, and its absence amongst the numerals, occurs in the Western Australian. The numeral *two* is *kardura;* but the dual pronoun is *boala*. The same phenomenon would occur in the present English if two circumstances had taken place, viz., if the Anglo-Saxon dual *wi-t* =*we two* had been retained up to the present time amongst the pronouns, and the word *pair, brace*, or *couple*, had superseded *two* amongst the numerals.

Lastly, the Western Australian and the Kowrarega so closely agree in the use of the numeral *two* for the dual pronoun, that each applies it in the same manner. In the *third* person it stands alone, so that in W. Australian *boala*, and in Kowrarega *pale=they two*, just as if in English we said *pair* or *both*, instead of *they both* (*he pair*); whilst in the second person, the pronoun precedes it, and a compound is formed; just as if, in English, we translated the Greek σφὼι by *thou pair* or *thou both*.

1.

Singular	*nga-tu=I, me.*
Dual	*albei=we two, us two.*
Plural	*arri=we, us.*

Here the plural and dual are represented not by a modification of the singular but by a new word; as different from *nga* as *nos* is from *ego*. The *tu*, of course, is non-radical, the Gudang form being *ngai*.

Nga, expressive of the first person, is as common as *ngi*, equivalent to the second. Thus, nga-*nya*, nga-*toa*, nga-*i*, nga-*pe=I, me*, in the W. Australian, N. S. Wales, Parnkalla, and Encounter Bay dialects.

Now, the difference between the first and second persons being expressed by different modifications (*nga, ngi,*) of the same root (*ng*), rather than by separate words, suggests the inquiry as to the original power of that root. It has already been said that, in many languages, the pronoun of the *third* person is, in origin, a demonstrative. In the Kowrarega it seems as if even the basis of the first and second was the root of the demonstrative also; since, by looking lower down in the list, we find that *i-na=this, che-na=that*, and *nga-du* (*nga* in Gudang) = *who*. *Ina* and *chena* also means *here* and *there*, respectively.

The dual form *albei* reappears in the Yak-kumban dia-

lect of the River Darling where *allewa=we two. Arri=us,* is also the first syllable in the Western Australian form *ar-linjul=we;* or, rather it is *ar-linjul* in a simpler and less compounded form. In a short specimen of Mr. Eyre's from the head of the Great Australian Bight, the form in *a* appears in the singular number, *ajjo=I* and *me.* The root *tana=they,* is not illustrated without going as far as the Western Australian of Mr. Eyre. Here, however, we find it in the compound word *par-tanna=many.* Its original power is probably *others;* and it is most likely a widely diffused Australian root.

The pronouns in question are compound rather than simple; *i. e.* instead of *nga=me,* and *ngi=thee,* we have *nga-tu* and *ngi-du.* What is the import and explanation of this? It may safely be said, that the termination in the Australian is *not* a termination like the Latin *met* in *ego-met,* inasmuch as this last is constant throughout the three persons (*ego-met, tute-met, se-met*), whereas, the former varies with the pronoun to which it is appended (*nga-tu,* and *ngi-du*). I hazard the conjecture that the two forms correspond with the adverbs *here* and *there;* so that *nga-tu =I here,* and *ngi-du=thou* there, and *nu-du*=he there. In respect to the juxta-position of the *simple* forms (*ngai, ngi,* and *nue*) of the Gudang with the compound ones (*nga-tu, ngi-du,* and *nu-du*) of the Kowrarega, it can be shewn that the same occurs in the Parnkalla of Port Lincoln; where Mr. Eyre gives the double form *ngai* and *nga-ppo* each=*I* or *me.*

Now, this analysis of the Kowrarega personals has exhibited the evolution of one sort of pronoun out of another, with the addition of certain words expressive of number, the result being no true inflexion but an agglutination or combination of separate words. It has also shewn how the separate elements of such combinations may appear in

different forms and with different powers in different dialects of the same language, and different languages of the same class, even where, in the primary and normal signification, they may be wanting in others. The first of these facts is a contribution to the laws of language in general; the second shews that a great amount of apparent difference may be exhibited on the surface of a language which disappears as the analysis proceeds.

In rude languages the Numerals vary with the dialect more than most other words. We can understand this by imagining what the case would be in English if one of our dialects counted things by the *brace*, another by the *pair*, and a third by the *couple*. Nevertheless, if we bear in mind the Greek forms *θαλασσα* and *θαλαττα*, we may fairly suppose that the Kowrarega word for *two*, or *quassur*, is the same word with the Head of Australian Bight *kootera*, the Parnkalla *kuttara*, and the W. Australian *kardura*, having the same meaning.

The difference, then, between the *numerals* of the Australian languages—and it is undoubtedly great—is no proof of any fundamental difference of structure or origin. It is just what occurs in the languages of Africa, and, in a still greater degree, in those of America.

The *extent to which the numeration is carried* is a matter of more importance. Possibly a numeration limited to the first three, four, or five numbers is the *effect of* intellectual inferiority. It is certainly a cause that continues it. As a measure of ethnological affinity it is unimportant. In America we have, within a limited range of languages, vigesimal systems like the Mexican, and systems limited to the three first units like the Caribb. The difference between a vigesimal and decimal system arises simply from the practice of counting by the fingers and toes col-

lectively, or the fingers alone, being prevalent; whereas the decimal system as opposed to the quinary is referrible to the numeration being extended to both hands, instead of limited to one. Numerations not extending as far as *five* are generally independent of the fingers *in toto*. Then as to the names of particular numbers. Two nations may each take the name of the number *two* from some natural dualism; but they may not take it from the same. For instance, one American Indian may take it from a pair of *skates*, another from a pair of *shoes*. If so, the word for *two* will differ in the two languages, even when the names for *skate* and *shoe* agree. All this is supported by real facts, and is no hypothetical illustration; so that the inference from it is, that, in languages where a *numeral system* is in the process of formation, difference in the names of the numbers is comparatively unimportant.

The extent to which the numerals vary, the extent to which they agree, and the extent to which this variation and agreement are anything but coincident with geographical proximity or distance, may be seen in the following table:—

English	one	two	three
Moreton Bay	kamarah	bulla	mudyan
——— Island	karawo	poonlah	madan
Bijenelumbo	warat	ngargark	2 + 1
Limbakarajia	crat	ngargark	do.
Terrutong	roka	oryalk	do.
Limbapyu	immuta	lawidperra	do.
Kowrarega	warapune	quassur	do.
Gudang	epiamana	elabaio	do.
Darnley Island	netat	nes	do.
Raffles Bay	loca	orica	orongarie
Lake Macquarie	wakol	buloara	ngoro
Peel River	peer	pular	purla

Wellington	ngungbai	bula	bula-ngungbai
Corio	koimoil		
Jhongworong	kap		
Pinegorine	youa		
Gnurellean	lua		
KingGeorge'sSound	keyen	cuetrel	murben
Karaula	mal	bular	culeba
Lachlan,RegentLake	nyoonbi	bulia	bulongonbi
Wollondilly River	medung	pulla	colluerr

The Verb now requires notice. In languages in the same stage of development with the Australian the usual analysis, as shewn by the late Mr. Garnett in his masterly papers on the structure of the verb, is as follows: 1. The root. 2. The *possessive* pronoun. 3. A particle of *time* – often originally one of *place.*

A rough illustration of this is the statement that such a word as *dormur* = *sleep—my—then* (or *there*). To apply this doctrine to the Kowrarega with our present *data,* is unsafe. Still, I am inclined (notwithstanding some difficulties) to identify the *pa* of the Present tense with the *bu* in *kai-bu* = *now,* and the *n* of the preterite with the *n* of *che-na* = *there.*

The double forms of the Past tense (one in *n,* and another in *m*) are at present inexplicable. So are the double forms of the Imperative, viz. the one in *r,* and the one in *e.* It may, however, be remarked, that wherever the Imperative ends in *e,* the Preterite has the form in *m;* thus, *pid-e* = *dig, pid-ema* = *dug.* The only exception is the anomalous form *peneingodgi* = *dived.* This prepares the future grammarian for a division of the Kowrarega Verbs into Conjugations.

The last class of words that supply the materials of

comment are the Substantives. Herein, the formation of the plural by the addition of *le*, probably occurs in several of the Australian tongues. I infer this from many of those words which we find in the vocabularies of languages whereof the grammar is unknown, and which are expressive of naturally *plural* objects ending in *li*, *la*, or *l*.

1. Star (stars) — *pur-le, pi-lle, poo-lle,* in Parnkalla, Aiawong, and Yak-kumban.

2. Fire (flames)—*ka-lla, gad-la,* in W. Australian and Parnkalla.

3. Head (hair) — *kur-le,* Encounter Bay. Here we learn from the forms *kar-ga,* from the Head of the Great Australian Bight, and *ma-kar-ta,* from Adelaide, that the *l* is foreign to the root.

4. Hands—*marrow-la* in the Molonglo dialect; as contrasted with *marra* in the Adelaide.

This, however, is merely a conjecture; a conjecture, however, which has a practical bearing. It suggests caution in the comparison of vocabularies; since, by mistaking an inflexion or an affix for a part of the root, we may overlook really existing similarities.

Father Anjello's very brief grammatical sketch of the Limbakarajia language of Port Essington* exhibits, as far as it goes, precisely the same *principles* as Mr. Macgillivray's Kowrarega; indeed, some of the details coincide.

Thus, the Limbakarajia personal pronouns are—

I = nga-pi.	*We = ngari.*
Thou = noie.	*We two = arguri.*
He, she, it = gianat.	*Ye = noie.*

They = ngalmo.

Here the *pi* in *nga-pi* is the *po* in the Aiawong *nga-ppo;*

* Given to Mr. Macgillivray by Mr. James Macarthur, and prefixed to the MS. Port Essington Vocabulary, alluded to at p. 157 of Vol. I

the *gian* in *gian-at* being, probably, the *in* in the Kowrarega *ina* = *that, this*. *Ngalmo*, also, is expressly stated to mean *many* as well as *they*, a fact which confirms the view taken of *tana*.

As for the tenses of the verbs, they are evidently no true tenses at all, but merely combinations of the verbal root, and an adverb of time. In Limbakarajia, however, the adverbial element *precedes* the verbal one. In Kowrarega, however, the equivalent to this adverbial element (probably a simple adverb modified in form so as to amalgamate with its verb, and take the appearance of an inflexion) follows it—a difference of order, sequence, or position, upon which some philologists will, perhaps, lay considerable stress. On the contrary, however, languages exceedingly similar in other respects, may differ in the order of the parts of a term; *e. g.* the German dialects, throughout, place the article *before* the noun, and keep it separate: whereas the Scandinavian tongues not only make it follow, but incorporate it with the substantive with which it agrees. Hence, a term which, if modelled on the German fashion, should be *hin sol*, becomes, in Scandinavian, *solen* = *the sun*. And this is but one instance out of many. Finally, I may add that the prefix *apa*, in the present tense of the verb = *cut*, is, *perhaps*, the same affix *eipa* in the present tense of the Kowrarega verbs.

Another point connected with the comparative philology of Australia is the peculiarity of its phonetic system. The sounds of *f* and *s* are frequently wanting. Hence, the presence of either of them in one dialect has been considered as evidence of a wide ethnological difference. Upon this point—in the case of *s*—the remarks on the sound systems of the Kowrarega and Gudang are important. The statement is, the *s* of the one dialect becomes *ty* or

tsh (and *ch*) in the other. Thus the English word *breast* = *susu*, Kowrarega; *tyu-tyu*, Gudang, and the English *outrigger float*=*sarima*, Kowrarega; *charima*, Gudang,—which of these two forms is the older? Probably the Gudang, or the form in *ty*. If so, the series of changes is remarkable, and by attending to it we may see how sounds previously non-existent may become evolved.

Thus—let the original form for *breast* be *tutu*. The first change which takes place is the insertion of the sound of *y*, making *tyu-tyu*; upon the same principle which makes certain Englishmen say *gyarden*, *kyind*, and *skyey*, for *garden*, *kind*, and *sky*. The next change is for *ty* to become *tsh*. This we find also in English, where *picture* or *pictyoor* is pronounced *pictshur*, &c. This being the change exhibited in the Gudang form *tyutyu* (pr. *choochoo*, or nearly so), we have a remarkable phonetic phenomenon, viz. the existence of a compound sound (*tsh*) wherein *s* is an element, in a language where *s*, otherwise than as the element of a compound, is wanting. In other words, we have a *sound formed out of s*, but not *s* itself; or (changing the expression still further) we have *s* in certain combinations, but not uncombined. Let, however, the change proceed, and the initial sound of *t* be lost. In this case *tsh* becomes *sh*. A further change reduces *sh* to *s*.

When all this has taken place—and there are many languages wherein the whole process is exhibited—the sound of a hitherto unknown articulation becomes *evolved* or *developed* by a natural process of growth, and that in a language where it was previously wanting. The phenomenon, then, of the evolution of new simple sounds should caution us against over-valuing phonetic differences. So should such facts as that of the closely allied dialects of the Gudang and Kowrarega differing from each other by the absence or presence of so important a sound as that of *s*.

The comparative absence, however, of the sound of *s*, in Australian, may be further refined on in another way; and it may be urged that it is absent, not because it has never been developed, or called into existence, but because it has ceased to exist. In the Latin of the Augustan age as compared with that of the early Republic, we find the *s* of words like *arbos* changed into *r* (*arbor*). The old High German, also, and the Icelandic, as compared with the Meso-Gothic, does the same. Still the change only affects certain inflectional syllables, so that the original *s* being only partially displaced, retains its place in the language, although it occurs in fewer words. In Australian, where it is wanting at all, it is wanting *in toto:* and this is a reason for believing that its absence is referrible to non-development rather than to displacement. For reasons too lengthy to exhibit, I believe that this latter view is *not* applicable to Australian; the *s*, when wanting, being undeveloped. In either case, however, the phonetic differences between particular dialects are the measures of but slight differences.

Now—with these preliminary cautions against the overvaluation of apparent differences—we may compare the new *data* for the structure of the Kowrarega and Limbakarajia with the received opinions respecting the Australian grammars in general.

These refer them to the class of *agglutinate* tongues, *i. e.* tongues wherein the inflections can be shewn to consist of separate words more or less incorporated or amalgamated with the roots which they modify. It may be said that this view is confirmed rather than impugned.

Now, what applies to the Australian grammars applies also to Polynesian and the more highly-developed Malay languages,—such as the Tagala of the Philippines, for instance; and, if such being the case, no difference of

principle in respect to their structure separates the Australian from the languages of those two great classes. But the details, it may be said, differ undoubtedly; and this is what we expect. Plural numbers, signs of tense, and other grammatical elements, are evolved by means of the juxtaposition of *similar* but not *identical* elements, *e. g.* one plural may be formed by the affix signifying *many;* another, by the affix signifying *with* or *conjointly;* one preterite may be the root *plus* a word meaning *then;* another the root *plus* a word meaning *there.* Futures, too, may be equally evolved by the incorporation or juxtaposition of the word meaning *after,* or the word meaning *to-morrow.* All this makes the exact coincidence of the details of inflection the exception rather than the rule.

This doctrine goes farther than the mere breaking-down of the lines of demarcation which separate classes of languages like the Australian from classes of languages like the Malayo-Polynesian. It shews how both may be evolved from monosyllabic tongues like the Chinese or Siamese. The proof that such is really the case lies in the similarity of individual words, and consists in comparative tables. It is too lengthy for the present paper, the chief object of which is to bring down the inferences from the undoubtedly great superficial differences between the languages of the parts in question to their proper level.

In respect to the *vocabularies,* the extent to which the analysis which applies to the grammar applies to the vocables also may be seen in the following instance. The word *hand* in Bijenclumbo and Limbapyu is *birgalk.* There is also in each language a second form—*anbirgalk* —wherein the *an* is *non-radical.* Neither is the *alk;* since we find that *armpit* = *ingamb-alk, shoulder* = *mundy-alk,* and *fingers* = *mong-alk.* This brings the root = *hand* to

birg. Now this we can find elsewhere by looking for. In the Liverpool dialect, *bir-il* = *hand*, and at King George's Sound, *peer* = *nails*. The commonest root, = *hand* in the Australian dialects, is *m-r*, *e.g.*

Moreton Bay	*murrah*	Corio	*far-onggnetok*
Karaula	*marra*	Jhongworong	*far-okgnata*
Sydney	*da-mora*	Murrumbidje	*mur-rugan*
Mudje	*mara*	Molonglo	*mar-rowla*
Wellington	*murra*	Head of Bight	*merrer*
Liverpool	*ta-mura*	Parnkalla	*marra*

All this differs from the Port Essington terms. *Elbow*, however, in the dialects there spoken, = *waare*; and *forearm* = *am-ma-woor*; *wier*, too, = *palm* in Kowrarega.

To complete the evidence for this latter word being the same as the *m-r* of the other dialects and languages, it would be necessary to shew, by examples, how the sounds of *m* and *w* interchange; and also to shew (by example also) how the ideas of *elbow*, *forearm*, and *hand* do so. But as the present remarks are made for the sake of illustrating a method, rather than establishing any particular point, this is not necessary here; a few instances taken from the names of the parts of the human body being sufficient to shew the general distribution of some of the commoner Australian roots, and the more special fact of their existence in the northern dialects:—

English	*hand*	Peel River	*ma*
Terrutong	*manawiye*	Raffles Bay	*maneiya*

English	*foot*	Moreton Bay	*chidna*
Moreton Island	*tenang*	Karaula	*tinna*
		Lake Macquarie	*tina*

Peel River	*tina*	Jhongworong	*gnen-ong-gnat-a*
Mudje	*dina*	Corio	*gen-ong-gnet-ok*
Wellington	*dinnung*	Colack	*ken-ong-gnet-ok*
Liverpool	*dana*	Bight Head	*jinna*
Bathurst	*dina*	Parnkalla	*idna*
Boraipar	*tchin-nang-y*	Aiawong	*dtun*
Lake Hindmarsh	*jin-nerr*	K. George's Sound	*tian*
Murrumbidje	*tjin-nuk*	Goold Island	*pinyun* and *pinkan*
Molonglo	*jin-y-gy*		
Pinegorine	*gena*		
Gnurellean	*gen-ong-be-gnen-a*		

English	*hair, beard*	Goold Island	*kiaram*
Moreton Island	*yerreng*	Wellington	*uran*
Bijenelumbo	*yirka*	Karaula	*yerry*
Regent's Lake	*ooran*	Sydney	*yaren*
Lake Macquarie	*wurung*	Peel River	*ierai*
		Mudje	*yarai*

English	*eye*	Jhongworong	*mer-ing-gna-ta*
Moreton Island	*mel*	Pinegorine	*ma*
Moreton Bay	*mill*	Gnurellean	*mer-e-gnen-a*
Gudang	*emeri=eye-brow*	Boraipar	*mer-ring-y*
Bijenelumbo	*merde=eyelid*	Lake Hindmarsh	*mer*
Regent's Lake	*mil*	Lake Mundy	*meer-rang*
Karaula	*mil*	Murrumbidje	*mil*
Mudje	*mir*		

Corio	*mer-gnet-ok*	Bight Head	*mail*
Colack	*mer-gnen-ok*	K. George's Sound	*mial*
Dautgart	*mer-gna-nen*		

English	*tooth*	Sydney	*yera*
Moreton Island	*tiya*	Wellington	*irang*
		Murrumbidje	*yeeran*
Moreton Bay	*deer*		
Lake Macquarie	*tina*	Goold Island	*eera*

English	*tongue*	Lake Macquarie	*talan*
Moreton Bay	*dalan*		
Regent's Lake	*talleng*	Sydney	*dalan*
Karaula	*talley*	Peel River	*tale*
Goold Island	*talit*	K. George's Sound	*talien*

English	*ear*	Moreton Bay	*bidna*
Kowrarega	*kowra*	Karaula	*binna*
Sydney	*kure*	Peel River	*bine*
Liverpool	*kure*	Bathurst	*benang-arei*
Lake Macquarie	*ngureong*	Goold Island	*pinna*

The Miriam Vocabulary belongs to a different class, viz. the Papuan. It is a dialect of language first made known to us through the Voyage of the Fly, as spoken in the islands Erroob, Maer, and Massied. Admitting this, we collate it with the North Australian tongues, and that, for the sake of *contrast* rather than *comparison*. Here, the philologist, from the extent to which the Australian tongues differ from each other, notwithstanding their real affinity,

is prepared to find greater differences between an *Australian* and a *Papuan* language than, at the first glance, exists. Let us verify this by reference to some words which relate to the human body, and its parts.

English.	Erroob.	Massied.	Kowrarega.	Gudang.
Nose	*pit*	*pichi*	*piti*	
Lips	. . .	*anka*	. . .	*angka*
Cheek	*baag*	. . .	*baga*	*baga*
Chin, jaw	*iba*	*ibu*	*ibu*	*ebu*
Navel	*kopor, kupor*	*kupor*	*kupar*	*kopurra*
Eye	. . .	*dana*	*dana*	*dana*
Skin	*egur*	. . .	. . .	*equora*
Vein	*kerer*	*kirer*	*kerur*	*kerur*
Bone	*lid*	. . .	*rida*	
Sore	*bada*	. . .	*bada*	

Few Australian vocabularies are thus similar—a fact which may be said to prove too much; since it may lead to inference that the so-called Papuan tongue of Torres Strait is really Australian. Nevertheless, although I do not absolutely deny that such is the case, the evidence of the whole body of ethnological fact—*e.g.* those connected with the moral, intellectual, and physical conformation of the two populations—is against it.

And so is the philology itself, if we go further. The Erroob pronouns are,

Me = ka	*you = ma*	*his = eta*
Mine = ka-ra	*your = ma-ra*	

all of which are un-Australian.

Are we then to say that all the words of the table just given are borrowed from the Australian by the Papuans, or *vice versâ?* No. Some belong to the common source of the two tongues, *pit = nose* being, probably, such a

word; whilst others are the result of subsequent intercourse.

Still, it cannot absolutely be said that the Erroob or Miriam tongue is not Australian also, or *vice versâ*. Still less, is it absolutely certain that the former is not transitional between the New Guinea language and the Australian. I believe, however, that it is not so.

The doubts as to the philological position of the Miriam are by no means diminished by reference to the nearest unequivocally Papuan vocabulary, viz. that of Redscar Bay. Here the difference exceeds rather than falls short of our expectations. The most important of the few words which coincide are

English.	Redscar Bay.	Erroob.
Head	*quara*	*kerem*
Mouth	*mao*	*mit* = *lips*
Testicles	*abu*	*cba* = *penis*
Shoulder	*paga*	*pagas* = *upper arm*

On the other hand, the Redscar Bay word for *throat, kato,* coincides with the Australian *karta* of the Gudang of Cape York. Again, a complication is introduced by the word *buni-mata* = *eyebrow*. Here *mata* = eye, and, consequently, *buni* = brow. This root re-appears in the Erroob; but there it means the *eyeball,* as shewn by the following words from Jukes' Vocabulary.

Eye	*irkeep*
Eyebrow	*irkeep-moos* = *eye-hair*
Eye ball	*poni*
Eyelid	*poni-pow* = *eyeball-hair*

Probably the truer meaning of the Redscar Bay word is *eyeball.*

No inference is safer than that which brings the popu-

lation of the Louisiade Archipelago, so far, at least, as it is represented by the Vocabularies of Brierly Island and Duchateau Island, from the eastern coast of New Guinea. What points beyond were peopled from Louisiade is another question.

For the islands between New Ireland and New Caledonia our *data* are lamentably scanty; the list consisting of—

1. A short vocabulary from the Solomon Isles.
2. Short ones from Mallicollo.
3. The same from Tanna.
4. Shorter ones still from Erromanga and
5. Annatom.
6. Cook's New Caledonian Vocabulary.
7. La Billardiere's ditto.

The collation of these with the Louisiade has led me to a fact which I little expected. As far as the very scanty *data* go, they supply the closest resemblance to the Louisiade dialects, from the two New Caledonian vocabularies. Now New Caledonia was noticed in the Appendix to the Voyage of the Fly (vol. ii. p. 318) as *apparently* having closer philological affinities with *Van Diemen's Land,* than that country had with Australia; an apparent fact which induced me to write as follows: "A proposition concerning the Tasmanian language exhibits an impression, rather than a deliberate opinion. Should it, however, be confirmed by future researches, it will at once explain the points of physical contrast between the Tasmanian tribes and those of Australia that have so often been insisted on. It is this—that the affinities of language between the Tasmanian and the New Caledonian are stronger than those between the Australian and Tasmanian. This indicates that the stream of population for Van Diemen's Land ran *round* Australia, rather than across it." Be this as it may, the remark, with our present scanty materials, is, at best, but a suggestion—a

suggestion, however, which would account for the physical appearance of the Tasmanian being more New Caledonian than Australian.

The chief point of resemblance between the Louisiade and the New Caledonian is taken from the numerals. In each system there is a *prefix,* and in each that prefix begins with a labial letter—indeed the *wa* of New Caledonia and the *pahi* of Louisiade seem to be the same roots.

	1.	2.
Brierly Island	paihe-tia	pahi-wo
Cook's New Caledonia	wa-geeaing	wa-roo
La Billardiere's do.	oua-nait	oua-dou
	3.	4.
Brierly Island	paihe-tuan	paihe-pak
Cook's New Caledonia	wa-teen	wa-mbaeek
La Billardiere's do.	oua-tguien	oua-tbait
	5.	6.
Brierly Island	paihe-lima	paihe-wona
Cook's New Caledonia	wa-nnim	wa-nnim-geeek
La Billardiere's do.	oua-nnaim	oua-naim-guik
	7.	8.
Brierly Island	pahe-pik	paihe-wan
Cook's New Caledonia	wa-nnim-noo	wa-nnim-gain
La Billardiere's do.	oua-naim-dou	ou-naim-guein
	9.	10.
Brierly Island	paihe-siwo	paihe-awata
Cook's New Caledonia	wa-nnim-baeek	wa-nnoon-aiuk
La Billardiere's do.	oua-naim-bait	oua-doun-hic

The Redscar Bay numerals are equally instructive. They take two forms: one with, one without, the prefix in *ow,* as recorded by Mr. Macgillivray.

This system of prefix is not peculiar. The Tanna and Mallicollo numerals of Cook are—

English.	Tanna.	Mallicollo.
One	r-eedee	tsee-kaee
Two	ka-roo	e-ry
Three	ka-har	e-rei
Four	kai-phar	e-bats
Five	k-reerum	e-reeum
Six	ma-r-eedee	tsookaeee
Seven	ma-ka-roo	gooy
Eight	ma-ka-har	hoo-rey
Nine	ma-kai-phar	good-bats
Ten	ma-k-reerum	senearn

Here, although the formations are not exactly regular, the prefixion of an initial syllable is evident. So is the quinary character of the numeration. The prefix itself, however, in the Tanna and Mallicollo is no *labial*, as in the Louisiade and New Caledonian, but either *k* or a vowel.

The next fact connected with the Louisiade vocabularies is one of greater interest. Most of the names of the different *parts of the body* end in *da*. In the list in question they were marked in italics; so that the proportion they bear to the words not so ending was easily seen. Now it is only the words belonging to this class that thus terminate. Elsewhere the ending *da* is no commoner than any other.

What does this mean? If we look to such words as *mata-da*=eyes, *sopa-da*=lips, *maka-da*=teeth, and some other naturally *plural* names, we should infer that it was a sign of *number*. That this, however, is not the case is shewn by the equivalents to *tongue*, *nose*, and other *single* members where the affix is equally common. What then is its import? The *American* tongues help us here.

English	Mbaya	Abiponi	Mokobi
Head	na-guilo	ne-maiat	
Eye	ni-gecoge	na-toele	ni-cote
Ear	na-pagate		
Nose	ni-onige		
Tongue	no-gueligi		
Hair	na-modi	ne-etiguic	na-ccuta
Hand	ni-baagadi	na-pakeni	na-poguena
Foot	no-gonagi		

English	Moxa (1)*	Moxa (2)	Moxa (3)
Head	nu-ciuti	nu-chuti	nu-chiuti
Eye	nu-chi	. .	nu-ki
Ear	nu-cioca		
Nose	nu-siri	nu-siri	
Tongue	nu-nene	nu-nene	nu-nene
Hand	nu-bore	nu-boupe	nu-bore
Foot	ni-bope	. .	ni-bope

Now in these, and in numerous other American tongues, the prefix is the *possessive pronoun;* in other words, there is a great number of American languages where the capacity for abstracting the thing possessed from the possessor is so slight as to make it almost impossible to disconnect the noun from its pronoun. I believe, then, the affixes in question have a *possessive* power; and am not aware that *possessive* adjuncts thus incorporated have been recognised in any of the languages for these parts; indeed, they are generally considered as American characteristics.

How far does their presence extend? In the New Caledonian vocabulary of La Billardiere we find it. The names of the parts of the body all take an affix, which no other class of words does. This is *gha, guai,* or *ghai,* or other similar combination of *g* with a vowel. In Van

* These are three different dialects.

Diemen's Land, an important locality, we find the following series of words, which are submitted to the judgment of the reader.

English.	Western Tasmanian.
Foot	lula
Leg	peea=piya=posteriors, Brumer I.
Thigh	tula=turi=knee, Brumer I.
Belly	cawara-ny
Neck	denia
Ears	lewli-na
Nose	me-na
Eyes	pollatoola=matara-pulupulura=eyelashes, Brierly I.
Hair	pareata
——	palani-na
Face	manrable
Mouth	ca-nia
Teeth	yannaloplc=yinge-da, Brierly I.
Tongue	tulla-na
Arm	alree
Fist	reannema-na
Head	pulbea-ny

Here the termination *na* appears elsewhere, as in *nemana*=fight, *nabagee-na*=sun; but by no means so frequently, nor yet with such an approach to regularity.

English.	Circular Head.
Hair	parba
Hand	rabal-ga
Foot	rabuc-ka
Head	ewuc-ka
Eye	mameric-ca.
Nose	rowari-ga
Tongue	mamana=mimena, Brumer I.
Teeth	cawna
Ear	cowanrig-ga

Here, however, it must not be concealed that the termination *ka*, or *ga*, occurs in other words, such as *tenal-ga* = laugh, *tar-ga* = cry, *teiri-ga* = walk, *lamuni-ka* = see. *These*, however, are verbs; and it is possible (indeed probable) that the *k* or *g* is the same as in the preceding substantives, just as the *m* in *su-m*, and ἐ-μι is the *m* in *meus*, *me*, and ἐμε. Still, this will not apply throughout; *e.g.* the words like *lalli-ga* = kangaroo, *para-ka* = flower, and others.

English.	Eastern Tasmanian.
Eye	lepe-na
Ear	pelverata
Elbow	rowella
Foot	langa-na
Fist	trew
Head	pathe-na-naddi
Hair	cetha-na
Hand	anama-na = nema-da, Brumer I.
Knee	nannabena-na
Leg	lathana-ma
Teeth	yan-na = yinge-da, Brierly I.
Tongue	me-na = mime-na, Brumer I.
Chin	came-na
Neck	lepera
Breast	wagley

Here, the number of other words ending in *na* is very considerable; so considerable that, if it were not for the cumulative evidence derived from other quarters, it would be doubtful whether the *na* could legitimately be considered as a possessive affix at all. It *may*, however, be so even in the present instance.

To these we may add two lists from the Lobo and Utanata dialects of the *south-western* coast of New Guinea.

English.	Utanata.	Lobo.
Arms	too	nima-ngo
Back	urimi	rusuko-ngo
Beard	. .	minooro
Belly	imauw	kanboro-ngo
Breast—*female*	auw	gingo-ngo
Breast—*male*	paiety	
Cheeks	awamu	wafiwirio-ngo
Ears	ianie	
Eyebrows	. .	matato-ngo-wuru
Eyes	mame	matatoto-ngo
Fingers	. .	nima-ngo-sori
Foot	mouw	kai-ngo
Hands	toe-mare	nima-ngo-uta
Hair	ocirie	mono-ng-furu
Head	ocpauw	mono-ngo or umum
Knee	iripu	kai-ngo-woko
Mouth	irie	orie-ngo
Nose	birimboe	sikaio-ngo
Neck	ema	gara-ng
Tongue	mare	kario-ngo
Thigh	ai	willanima
Teeth	titi	riwoto-ngo
Toes	. .	nisora

Finally, we have the long, and evidently compound forms of $p**$ in the Corio, Colack, and other Australian dialects; long and evidently compound forms which no hypothesis so readily explains as that of the *possessive adjunct*; a phenomenon which future investigation may shew to be equally Oceanic and American.

No. IV.

CATALOGUE OF THE BIRDS

OF THE

NORTH-EAST COAST OF AUSTRALIA AND TORRES STRAIT.

Lists exhibiting the occurrence of Australian Birds in particular districts are instructive, as shewing the range of species over the various parts of an extensive district, and as bearing upon, and to my mind confirming, to a certain extent, the views of those geologists who consider Australia to have formerly appeared as a cluster of three or four islands, subsequently connected since the tertiary epoch so as to form what may now be considered as a continent. With the kind assistance in determining the species of Mr. Gould, who has elsewhere published similar lists* of the birds of other parts of Australia, the annexed Catalogue has been made out. All the species contained therein have passed under my own observation, and I have distributed them in three columns: the first includes that portion of

* In the works of Strzelecki and Eyre, and Introduction to the Birds of Australia.

the north-east coast of Australia and its islands included between the Tropic of Capricorn and lat. 17° 45′ south, or the parallel of the bottom of the Gulph of Carpentaria; the second comprises the remainder of the north-east coast as far to the northward as Cape York; and the third is devoted to the islands of Torres Strait, from Raine Islet to Bramble Cay. The species marked with an ? are those which are probably local varieties, representatives of southern birds, shewing slight differences in size, &c., yet not decided enough to be of specific value.

Ichthyaetus leucogaster	1	2	3
Haliastur leucosternus	1	2	3
Pandion leucocephalus	1	2	3
Falco frontatus . .			3
Ieracidea Berigora .		2	
Astur Novæ Hollandiæ	1		3
—— approximans .	1	2	
Accipiter torquatus .	1	2	3
Milvus affinis . . .	1	2	
Circus Jardinii . .			3
Strix delicatula . .	1	2	3
Athene Boobook . .	1		
—— maculata . .	1	2	
Podargus humeralis .	1		
—— Papuensis . .		2	
—— marmoratus .		2	
Eurystopodus albogularis		2	3
—— guttatus . . .	1	2	3
Acanthylis caudacuta		2	
Cypselus Australis .		2	3
Collocalia	1		
Chelidon arborea . .	1		3
Merops ornatus . .	1	2	3
Dacelo Leachii . .	1	2	
Halcyon Torotoro .		2	
—— sancta . . .	1	2	3
—— sordida . . .	1	2	3
—— MacLeayii . .	1	2	3
Tanysiptera Sylvia .		2	
Alcyone azurea . .		2	
—— pusilla . . .	1	2	
Artamus leucopygialis	1	2	3
Dicæum hirundinaceum	1	2	3
Cracticus nigrogularis	1	2	
—— Quoyii . . .	1	2	
Grallina Australis .		2	
Grauculus melanops .	1	2	3
—— hypoleucus . .		2	
—— Swainsonii . .		2	
Campephaga Karu .	1	2	3
Pachycephala melanura		2	3
Colluricincla brunnea	1	2	3

Colluricincla harmonica		2	
Dicrurus bracteatus	1	2	3
Rhipidura rufifrons		2	
Seisura inquieta	1	2	3
Piezorhynchus nitidus	1	2	3
Myiagra concinna	1	2	3
—— latirostris	1	2	
Monarcha trivirgata	1	2	3
—— leucotis	1	2	
Arses Kaupii		2	
Petroica bicolor?		2	3
Machærirhynchus flaviventris		2	
Drymodes superciliosa		2	
Malurus amabilis		2	
—— Brownii	1		
Sphenœacus galactotes		2	3
Cysticola lineocapilla	1	2	3
Sericornis maculata?		2	
Anthus Australis	1	2	
Estrelda Bichenovii	1		
Donacola castaneothorax		2	3
Pitta strepitans	1	2	3
Chlamydera nuchalis	1		
—— cerviniventris		2	3
Oriolus assimilis		2	
—— flavocinctus		2	
Sphecotheres flaviventris		2	
Aplonis metallica		2	
Chalybæus cornutus		2	
Corvus coronoides	1	2	3
Ptilotis chrysotis	1	2	3
—— filigera		2	
——		2	
Entomophila	1		
Tropidorhynchus argenticeps		2	
——		2	
Myzomela erythrocephala		2	3
—— obscura	1	2	3
Nectarinia Australis	1	2	3
Zosterops luteus	1	2	3
Cuculus cineraceus	1		
Cuculus insperatus	1		
Chrysococcyx lucidus	1	2	
Endynamys Flindersii	1	2	3
Centropus Phasianus	1	2	3
Ptiloris Victoriæ	1		
—— magnifica		2	
Cacatua galerita	1	2	3
Microglossus aterrimus		2	
Calyptorhynchus Banksii	1		
Aprosmictus erythropterus?	1	2	
Platycercus palliceps?		2	
Melopsittacus undulatus	1		
Trichoglossus Swainsonii	1		3
—— rubritorquis		2	
Ptilonopus Ewingii	1	2	
—— superbus		2	3

Carpophaga luctuosa	1	2	3
—— puella . .		2	
Lopholaimus antarcticus		2	
Chalcophaps chrysochlora	1	2	
Phaps elegans . .	1		
Geopelia humeralis .	1	2	3
—— tranquilla .	1	2	3
Macropygia Phasianella?	1		
Talegalla Lathami .	1	2	
Megapodius tumulus	1	2	3
Turnix melanota .	1	2	3
Coturnix pectoralis .		2	
Synoicus Australis .	1	2	3
—— Sinensis .			3
Dromaius Novæ Hollandiæ . . .	1	2	
Otis Australasiana .	1		
Esacus magnirostris .	1	2	3
Œdicnemus grallarius	1		
Hœmatopus longirostris	1	2	3
—— fuliginosus .	1	2	3
Sarciophorus pectoralis	1		
Charadrius xanthocheilus	1	2	3
Hiaticula bicincta .	1		
—— ruficapilla .	1	2	3
—— inornata .		2	3
Limosa uropygialis .	1	2	3
Schœniclus Australis	1	2	3
—— albescens .	1	2	3
Actitis empusa .	1	2	
Glottis Glottoides .	1	2	3
Strepsilas Interpres .	1	2	3
Numenius Australis .	1	2	3
—— uropygialis .	1	2	3
—— minutus .		2	
Threskiornis strictipennis		2	
Grus Australasianus .	1	2	
Mycteria Australis .		2	
Ardea Pacifica .		2	
—— Novæ Hollandiæ	1		
Herodias jugularis .	1	2	3
—— Greyii . .	1	2	3
—— plumifera .		2	3
—— syrmatophora .			3
Nycticorax Caledonicus . . .	1	2	3
Ardetta flavicollis .	1	2	
—— stagnatilis .		2	3
Porphyrio melanota .			3
Rallus pectoralis .	1	2	3
Porzana leucophrys .			3
Tadorna Radjah .	1	2	
Anas superciliosa .	1		
—— punctata . .	1	2	
Xema Jamesonii? .	1	2	3
Sylochelidon strenuus . . .	1	2	
Thalasseus Pelecanoides . . .	1	2	3
Sterna gracilis . .		2	
—— melanauchen .	1	2	3
Sternula Nereis		2	3

Hydrochelidon fluviatilis		2	
Onychoprion fuliginosus	1	2	3
—— Panaya . .	1	2	3
Anous stolidus . .	1	2	3
—— leucocapillus .	1	2	3
Puffinus sphenurus .	1		3
Phalacrocorax Carboides	1		
Phalacrocorax melanoleucus	1	2	3
Attagen Ariel . .	1	2	3
Phaeton phœnicurus .			3
Pelecanus conspicillatus	1	2	3
Sula personata .			
—— fusca . .	1	2	3
—— piscator . .	1	2	3

No. V.

ON THE MOLLUSCA

COLLECTED BY MR. MACGILLIVRAY DURING THE VOYAGE OF THE RATTLESNAKE.

By PROFESSOR EDWARD FORBES, F.R.S.

I. On the Bathymetrical Distribution of Marine Testacea on the Eastern coast of Australia.

As in every instance the exact locality, depth and character of habitat of each species of Mollusk taken were carefully noted at the time of capture, much more valuable information elucidating the distribution of shell-fish in the Australian seas has been collected during this expedition than was ever before obtained. Whilst new species are usually sought after by collectors with eagerness, the habits and range of the commoner or less conspicuous forms are passed over without observation.*

* An extensive collection of landshells was made at Madeira. They proved on examination to be all known species, including several of the rarer forms, and not a few of those discovered by the Rev. Mr. Lowe. They were compared with Madeiran specimens by Mr. Vernon Wollaston. When the Rattlesnake touched at the Azores on the return voyage, a few landshells were collected at Fayal. Among them was the *Helix barbula*, an Asturian species, *Helix pauperata*, and *Bulimus variatus*, Madeiran or Canarian forms. A considerable number of marine and terrestrial Testacea were procured at Rio de Janeiro, not a few of them new and of great interest. *Terebratula rosea* was dredged off Rio in thirteen fathoms water, on a coarse sandy bottom. Collections were also made at the Cape of Good Hope, at Mauritius and in

Hence every note on the habitat and mode of life of marine creatures from the southern hemisphere becomes of no small value. Indeed, there is no information more desirable at this time for the illustration of geological phenomena, than such as may throw light on the distribution in range and depth of the creatures inhabiting the seas of the Tropics, and those living around the coasts of Australia and New Zealand. The following notes will serve to record the more prominent facts bearing upon the Bathymetrical distribution of the Testacea collected on the northern coast of Australia, at Port Essington, and on the eastern coast from Cape York to Bass' Strait, including the northern ports of Van Diemen's Land.

It may here be remarked that the Molluscan fauna of the seas of North Australia and of the north-east coast from Cape York southwards to Sandy Cape, belongs to the great Indo-Pacific province, a zoological region extending from the east coast of Africa (from Port Natal or a little above, northwards to Suez) to Easter Island in the Pacific. But south of Sandy Cape and onwards to Van Diemen's Land (and apparently including New Zealand), we have a distinct (East) Australian province, marked by a peculiar fauna in many respects, representative of the Senegal, and perhaps also Lusitanian regions of the North Atlantic.

Proceeding in descending order we may first remark on the

Shells of Salt Marshes. As in the Northern hemisphere, *Melampus* or *Conovulus* is the genus represented in such localities. Thus "*Auricula Australis*" prevails in salt marshes at Brisbane Water, and an allied species in similar places in New Zealand. In both instances

the Falkland Isles. The Radiata were gathered with as much care and their habitats recorded with as much attention as the Mollusca.

we find this form accompanied by members of a curious genus characteristic of the Australian province, — *Ampullacera*, the *Ampullacera Quoyana* being the Brisbane Water species, and *A. avellana*, that of New Zealand. In the latter case an *Assiminea* is its companion. A very curious fact noted during the expedition was the presence of a *Unio* living within the influence of salt water, in the River Brisbane.

Shells inhabiting mud, &c. among mangroves.

These belong to the Indo-Pacific province. Some are found on the mangroves themselves. Such are the *Littorina scabra*, on the trunks and branches of mangroves among islets in Trinity Bay; a *Phasianella* inhabiting the trunks and branches of *Rhizophora* at the Percy Isles; a *Littorina* on the leaves of *Aigæceras fragrans* at Port Curtis, *Auricula angulata*, and *rugulata* on the trunks of mangroves at Port Essington, and *Monodonta viridis* on their roots at Night Island; a new and very beautiful *Ostrea* was found on the roots of mangroves among Low Islets in Trinity Bay. In the last named locality a *Cytherea* inhabited the mud around their roots. At the Three Islets several new species of *Melampus*, a *Nerita* and a *Cyrena* lived in a like habitat, and at Port Essington *Cerithium Kieneri*, was found in the same situation. The fine *Cyrena cyrenoides* lives among the roots of mangroves in the Louisiade Archipelago.

Littoral Zone.—Of the many living Gasteropoda taken in this region, very few are new species. Of Patelloid forms we have a new *Fissurella* and *Parmophorus convexus* at Port Dalrymple, accompanied by *Haliotis nævosa*, and species of *Patella* and *Siphonaria*. In the more tropical regions, *Haliotis asinina* and *varia*, another and distinct *Patella*, two *Fissurellæ* and a *Scutella* were collected. Of convolute shells the littoral species gathered were all Indo-

Pacific and inhabitants of mostly the coral-reef region, such as *Cypræa arabica, annulus. isabella, errones* and *oryza, Conus magus, arenatus, achatinus, &c. Oliva cruentata, tremulina* and *ericinus*, those of the last named genus often living in sand. *Bulla cylindrica* occurred in sandy pools on the reef at Claremont Isles. Of Volutes, *V. Turneri* lives on coral blocks at Port Essington, and *V. undulata* partially buried in sand banks at Port Dalrymple. *Conus maculosus* is an inhabitant of the last-named locality. The *Mitras* found in the Littoral zone were all on the north-east coast, and well known Indo-Pacific forms. A new *Murex* was taken on mud at Port Curtis. *Fasciolaria coronata, Fusus alveolatus*, and *Triton verrucosus* were found on the reefs at Port Dalrymple. Many species of Nassa, all known forms, were collected, mostly on mud in the Littoral zone, chiefly in the north-eastern province. *Phos cyanostoma* lives on muddy sand in the Trinity Bay islets, where also in similar situations is *Terebra maculata* and *Pyramidella maculosa. Pyramidella auriscati* is a littoral shell among the reefs of the Claremont Isles. Several *Purpuræ* were taken on reefs and rocks at low water; among them was *P. textiliosa,* a Port Dalrymple species. A *Quoya* lives on rocks about high-water mark in Lizard Island. Several *Terebræ,* including *T. crenulata, dimidiata* and *affinis,* inhabit muddy sand among Pipon's Islets. The well-known *Strombus luhuanus* lives on sand among the reefs at Eagle Island. A *Cerithium* inhabits mud-flats at Port Molle and Pipon's Islets. Of the holostomatous gasteropods inhabiting the Littoral zone, the *Naticæ,* mostly well-known species, were taken in sandy localities on the north-east coast, and the *Neritæ* in the same province, mostly on rocks or reefs. *Littorina pyramidalis* and *mauritiana* are inhabitants of the rocky headlands of Broken Bay; other forms were collected at Port

Curtis and at Port Dalrymple. At the last-named locality, *Turbo undulatus*, a new *Risella*, *Monodonta constricta* and *buccata*, and *Trochus reticularis* were taken on reefs. Littoral species of the same genera occurred on the north-east coast. A new *Rissoa* was found under stones at Night Island. *Turbo squamosus* and *Trochus lentiginosus* are inhabitants of the shore at Port Essington. In Broken Bay species of *Bankivia* and *Scalaria* were collected, cast dead on the shore.

The Acephala found living in the Littoral zone of the south-east Australian province were *Cleidotherus chamoides*, under rocks at low water in Port Jackson; *Mytilus erosus* on the mud of *zostera* flats at Port Dalrymple, several species of *Venus*, *Tapes*, *Cytherea* in similar localities; *Arca globata* in the same habitat at Brisbane; *Arca fuscata* in reefs at Port Dalrymple; a new *Tellina* on mud at Port Phillip; another with *Donax epidermia* in sand at Broken Bay, and *Clavagella australis* on rocks at low-water, Port Jackson. Species of *Pectunculus*, *Nucula*, *Pandora*, *Anatinella*, *Venus*, *Tellina* (*decussata* and *deltoidalis*) and *Mesodesma* are thrown dead on the shores.

In the north and north-east Australian province the living littoral Acephala are *Solens* of which two new species were taken at Port Essington, *Anomia australis*, *Anatina olerina*, and another, new, in the same locality; species of *Mytilus*, *Meleagrina* and *Pinna*, *Ostrea* and *Pecten* (*pyxidatus*) *Lima fragilis* and *squamosa*, *Hippopus* and *Tridacna* the former detached on coral reefs, the latter imbedded in the coral, *Corbis fimbriatus* in sand among coral reefs; species of *Venus*, *Cytherea*, *Circe*, and *Tapes* in mud, *Artemis sculpta* at Port Essington on sand, *Lucinæ* on sand or reefs, *Crassatella* on mud flats at Port Curtis, where *Cypricardia vellicata* occupies the fissures of rocks with *Carditæ*; several species of *Cardium* in mud or sand, in-

luding *C. fragum*, *C. subrugosum*, and *C. unedo*; *Sanguinolaria rugosa* at Dunk Island; species of *Mesodesma* in sand, and *Mactræ* and *Tellinæ* in mud; a new *Psammobia* at Port Essington as also a new *Pholas* that bores into coral. Other species, members of the same genera, are cast on shore dead.

Region of Weeds equivalent to the Laminarian Region of the European Seas. Some seventeen or eighteen localities in this Bathymetrical province were explored by means of the dredge, varying in depth from one to seventeen fathoms. In the south-east Australian province the principal Gasteropoda procured were *Bulla brevis*, at Port Jackson, in 6 fathoms; *Cyprea oryza*, at Port Phillip, in 5 fathoms; *Calyptræa connata*, in 6 fathoms, Port Jackson, with *Nassa suturalis*, and another, a new *Terebra*, *Monotigma casta*, *Mitra sordida*, a *Marginella*, a *Columbella*, and *Struthiolaria oblita*. A *Phasianella* was dredged in from 3 to 5 fathoms on sandy mud, at Port Phillip, with *Elenchus rutilus*, *Marginella fornicata*, and *Cerithium granarium*. In the North-east Australian province, a different set of shells was dredged in similar depths, such as a *Sigaretus*, possibly new, *Fissurella calyculata*, *Mitra obeliscus*, a *Turritella*, a *Murex*, *Columbella versicolor*, and a new species off Cape York, *Ranella pulchella*, new, several *Nassæ*, *Phos senticosa* and *Blainvillei*, and *sculptilis*, in 3 and 5 fathoms, off Cape York; *Strombus Campbelli*, in mud off Cape Upstart; *Cerithium obeliscus*, and a new species of the genus *Obeliscus*. In the deeper localities *Cypræa fimbriata* occurred, dead, off Cape Capricorn; and two species of *Ranella*, one being *R. pusilla*, in 17 fathoms, off the Percy Isles. The univalves dredged among the Louisiade Islands in this region of depth were mostly known forms, such as *Conus betulinus*, *Oliva sanguinolenta*, *Mitra exasperata*, *Terebra maculata*, *consors* and *labiata*; these were all taken in less than six fathoms water.

The bivalves of this region were but few. In the South Australian province species of *Mactra*, *Psammobia*, *Venus*, *Tapes* and *Pecten*, all peculiar, were taken. This is the region of the peculiar genus *Myadora*, of which five species were dredged on sand in 6 fathoms at Port Jackson, along with *Myochama anomioides*, *Trigonia margaritacea*, *Lima bullata*, and *Cardium radiatum*. In the North-east Australian province we have species of *Donax*, *Mactra* and *Corbula*, all apparently new, from the shallower localities; *Corbula tunicata*, *Pectunculus tenuicostatus*, and another, from 8 to 11 fathoms, off Cumberland Islands; species of *Arca*, *Pectunculus*, *Avicula*, *Pecten*, *Venus*, *Circe*, *Cardium Cardita*, and *Erycina*, mostly new, from 15 to 17 fathoms in a sandy and shelly bottom off Cape Capricorn.

Coralline Zone. Some dredgings in both North and South-eastern provinces, in depths between twenty-seven and forty-five fathoms, give a slight idea of the fauna of this important region. In the South-eastern province we find in forty and forty-five fathoms on a muddy bottom in Bass's Strait, *Turritella sinuata*, *Trochus nebulosus*, a *Pleurotoma*, an *Emarginula*, a *Dentalium*, two species of *Cardita*, a *Cypricardia*, a *Venus*, a *Nucula*, and *Pectunculus holosericeus*. In the North-eastern province we find off Cumberland Island in 27 fathoms, also on a muddy bottom, species of *Murex*, *Nassa*, *Turritella*, *Ranella pusilla*, a *Fusus*, *Cancellaria antiquata*, a *Terebra*, two *Dentalia*, a *Natica*, a *Terebellum*, a *Scalaria*, a *Cardium*, a *Venus*, a *Nucula*, a *Pecten*, and a *Spondylus*.

It is evident from the comparative paucity of undescribed species procured in the Littoral zone and the large proportion of new or doubtful forms among those taken by the dredge, that a rich harvest has yet to be reaped in the deeper regions of the southern seas. In the lower zones, however, just as much as in the upper, the distinctions of province are maintained. The explanation of this com-

plete separation of the South-eastern marine fauna of Australia from that of the North-eastern or Indo-Pacific portion, may be explained by reference to the distribution of currents along the Australian shores. In both, as in the Bathymetrical regions of the South Atlantic, the Testacea of the depths are generally smaller and less brightly coloured than those inhabiting the shallows.

During this voyage notes of the habitats of considerably more than a thousand species of Mollusca and Echinodermata were carefully registered.

II. Enumeration of Terrestrial Pulmoniferous Mollusca as yet noticed in Australia.

The following Catalogue is founded on the Monograph of Helicidæ by Dr. Pfeiffer. To the species therein described are added certain new ones, announced by Pfeiffer since the publication of his work, and others, recorded for the first time in this volume. It will be seen that a great part of the Australian land-shells is as yet unfigured. The exact localities of not a few have to be determined; a precise record was kept of the place and circumstances under which each was found during the voyage of the Rattlesnake. From all we yet know the genus *Helix* is fairly represented in New Holland, and presents some very remarkable and peculiar forms; *Bulimus* has but few, and those (with the sole exception of *B. atomatus*) not remarkable Australian members; a single *Pupa*, closely resembling one of our commonest European species, is the only recorded Australian one; and a very remarkable addition to the terrestrial conchology of the southern hemisphere has been made in a *Balea* of a type unlike any other member of the genus.

HELIX.

1. *H. Falconari,* Reeve. (Conch. Syst. t. 163, f. 4).
   Loc. Bellingen River, in the brushes (Macgillivray).
2. *H. irradiata,* Gould.
   Loc. New South Wales.
3. *H. Australis,* Menke.
   Loc. Swan River.
4. *H. Georgiana,* Quoy and Gaimard.
   Loc. King George's Sound.
5. *H. Novæ Hollandiæ,* Gray.
   Loc. Macquarie River.
6. *H. Jervisensis,* Quoy and Gaimard. (Voy. Astr. ii. t. 10, f. 26-30).
   Loc. Jervis Bay (Quoy and Gaimard). Brisbane Water, under logs in dry, stony, and scrubby ground (Macgillivray).
7. *H. subgranosa,* Le Guillou.
   Loc. North Australia.
8. *H. capillacea,* Ferussac. (Hist. t. 82, f. 5).
   Loc. Port Jackson (Ferussac).
9. *H. Jacksoniensis,* Gray.
   Loc. Port Jackson. May not this be *H. nitida* introduced?
10. *H. Walkeri,* Gray.
    Loc. New Holland.
11. *H. Gilberti,* Pfeiffer.
    Loc. Darling Downs, East Australia (Gilbert). Brisbane Water, under logs in the brushes (Macgillivray).
12. *H. splendidula,* Pfeiffer. (Chemnitz, ed. 2nd, t. 85, f. 1-3.)
    Loc. Eastern Australia, near Torres Strait (Ince). Blackwood Bay, and Restoration Island (Brit. Mus.)
13. *H. ziczac,* Gould.
    Loc. New South Wales.

14. *H. Grayi,* Pfeiffer.
Loc. East Australia.

15. *H. macrodon,* Menke. (Fer. as *M. Duclosiana.* Hist. t. 51 A, f. 6).
Loc. New Holland.

16. *H. vitracea,* Ferussac. (Hist. t. 64, f. 5).
Loc. New Holland? (Beck).

17. *H. Lessoni,* Pfeiffer.
Loc. Under bark of *Eucalypti,* coming out after rain, at Port Curtis (Macgillivray).

18. *H. tortulus,* Ferussac. (Hist. t. 27, f. 3, 4).
Loc. New Holland. Port Essington and N.W. coast of Australia (Brit. Mus.)

19. *H. Dringi,* Pfeiffer.
Loc. East Coast of Australia, near Torres Strait (Dring).

20. *H. Sinclairi,* Pfeiffer.
Loc. Van Diemen's Land (Sinclair).

21. *H. semicastanea,* Pfeiffer. (Chemnitz, Ed. 2nd, t. 56, f. 3-5).
Loc. "Unknown, probably New Holland," Pfeiffer.

22. *H. bipartita,* Ferussac. (Hist. t. 75 A, f. 1).
Loc. At the roots of trees and bushes in Lizard Island, and at Cape York (Macgillivray). Restoration Island (Brit. Mus.)

23. *H. pomum,* Pfeiffer. (Phil. Icon. Helix, t. 2. f. 8).
Loc. Port Essington, about roots of trees (Macgillivray). This appears to be *H. sphæroidea,* Le Guillou (*H. Urvillei,* Homb. et Jacq. Voy. au Pole Sud. Moll. t. 3, f. 1-3), of which Pfeiffer remarks, "an varietas præcedentis?"

24. *H. Janellei,* Le Guillou.
Loc. North Australia.

25. *H. leptogramma,* Pfeiffer.

Loc. Cygnet Bay, in North Australia (Ince).

26. *H. Incei*, Pfeiffer. (Phil. Icon. Helix, t. 7, f. 3).

Loc. Percy Isles, under bark; Port Molle, and Keppel's Isles, in hollow trees (Macgillivray).

27. *H. prunum*, Ferussac. (Hist. t. 26, f. 7, 8).

Loc. Australia?

28. *H. pelodes*, Pfeiffer. (Chemnitz, Ed. 2nd, t. 58, f. 6, 7).

Loc. Port Essington, on trunks of *melaleuca* trees (Macgillivray).

29. *H. pedestris*, Gould.

Loc. New South Wales.

30. *H. similaris*, Ferussac. (Hist. t. 25 B, f. 1-4).

Loc. Under decaying logs in the Frankland Isles, chiefly dead (Macgillivray). This species appears to be most widely diffused. It is recorded from the West Indies and Brazil, Java, the Seychelles and Mauritius, and Bengal and China! This is the first announcement of it as an Australian shell. Does it make its way about on floating timber?

31. *H. Delessertiana*, Le Guillou (*H. Torresii*, Homb. et Jacq. Voy. au Pole Sud. Moll. t. 4, f. 24-27).

Loc. Warrior Island, Torres Strait (Le Guillou, &c.) Nogo Island, Endeavour Strait, at roots of grass (Macgillivray).

32. *H. gulosa*, Gould.

Loc. New South Wales.

33. *H. Tuckeri*, Pfeiffer. (Chemnitz, Ed. 2nd, Helix, t. 79, f. 10-12).

Loc. Under dead leaves at roots of trees in Sunday Island (Macgillivray). The original recorded habitat was Sir Charles Hardy's Islands, where also Mr. Macgillivray found it in 1844. As Pfeiffer suspects, *H. cyclostomata* of Le Guillou (*H. strangulata*, Homb. et

Jacq. Voy. au Pole Sud. Moll. t. 6, f. 1-4), is this species; from Warrior Island, Torres Strait.

34. *H. Cunninghami*, Gray. (Griffith, An. Kingd. t. 36, f. 4).

Loc. Darling Downs, New South Wales (Macgillivray); brushes near Wide Bay (Strange).

35. *H. Taranaki*, Gray. (Chemnitz, Ed. 2, t. 75, f. 4, 5).

Loc. Possession Island, Torres Strait (Ince).

The following are not enumerated as Australian in the first edition of Pfeiffer's Monograph:—

36. *H. Strangei*, Pfeiffer.

Loc. At Brisbane Water, New South Wales, under logs in the brushes (Macgillivray).

37. *H. Dupuyana*, Pfeiffer. (Chemnitz, Ed. 2nd, Helix, t. 124, f. 15, 16).

Loc. Bellingen River, in the brushes (Macgillivray).

38. *H. pachystyla*, Pfeiffer.

Loc. Facing Island, Port Curtis; Dunk Island; Cape Upstart, at roots of bushes; Wide Bay, under bark of *Eucalyptus resinifera* (Macgillivray). This fine species was originally recorded as a native of New Zealand; was not the supposed habitat a mistake?

39. *H. Yulei*, Forbes. (Voy. Rattlesnake, t. 2, f. 6).

Loc. Port Molle (Macgillivray).

40. *H. iuloidea*, Forbes. (Voy. Rattlesnake, t. 2, f. 4).

Loc. Port Molle (Macgillivray).

41. *H. ptycomphala*, Pfeiffer.

Loc. Roots of trees among dead leaves at Cape Upstart (Macgillivray).

42. *H. Dunkiensis*, Forbes. (Voy. Rattlesnake, t. 2, f. 7.)

Loc. Dunk Island (Macgillivray).

43. *H. Macgillivrayi*, Forbes. (Voy. Rattlesnake, t. 3, f. 1).

Loc. Frankland Isles (Macgillivray).

44. *H. Franklandiensis,* Forbes. (Voy. Rattlesnake, t. 2, f. 2).

Loc. Frankland Isles and Lizard Island (Macgillivray).

45. *H. inconspicua,* Forbes. (Voy. Rattlesnake, t. 2, f. 3).

Loc. Islet in Trinity Bay (Macgillivray).

46. *H. brevipila,* Pfeiffer. (Chemnitz, Ed. 2, Helix t. 124, f. 28—30).

Loc. Under dead leaves at roots of trees in Sunday Island (Macgillivray).

47. *H. Fraseri,* Gray. (Beechey's Voy. Zool. t. 38, f. 6).

Loc. Wide Bay and Clarence River, New South Wales, in the scrubs (Macgillivray). The true locality of this species—first given by Beck—is thus verified.

48. *H. Gærtneriana,* Pfeiffer.

Loc. Night Island, on trunks and branches of a *Bombax* (Macgillivray).

49. *H. sericatula,* Pfeiffer.

Loc. Port Jackson (Strange).

Bulimus.

1. *B. faba,* Martyn. (Reeve Conch. Syst. t. 175, f. 13, 14).

Loc. Australian Isles? A Polynesian species.

2. *B. Tuckeri,* Pfeiffer.

Loc. Inhabits most of the islands on the N.E. coast of Australia. Among dead leaves at the roots of trees and bushes in Fitzroy, Sunday, and Lizard Islands, and at roots of grass in Sir Charles Hardy's Islands (Macgillivray).

3. *B. Dufresnii,* Leach. (Fer. Hist. t. iii. f. 1—3).

Loc. Van Diemen's Land. Under logs and stones (Macgillivray).

4. *B. atomatus,* Gray. (Reeve Conch. Icon. Bulimus, t. 30, f. 184).

Loc. New South Wales (Macgillivray). Western Australia (Brit. Mus.)

5. *B. Kingii,* Gray. (Wood, Suppl. t. 7, f. 27).

Loc. Bald Head, King George's Sound (King).

6. *B. trilineatus,* Quoy and Gaimard. (Voy. Astr. ii. t. 9, f. 1—3).

Loc. Bald Head, King George's Sound (Quoy and Gaimard). "Varietas præcedentis esse videtur." Pfeiffer.

7. *B. rhodostomus,* Gray.

Loc. New Holland?

8. *B. indutus,* Menke.

Loc. Darling Range and Mount Eliza, Swan River (Priess).

9. *B. melo,* Quoy and Gaimard. Voy. Astr. ii. t. 9, f. 4—7.)

Loc. Bald Head, King George's Sound (Quoy and Gaimard).

10. *B. bulla,* Menke.

Loc. Darling Range, Western Australia (Priess.)

11. *B. inflatus,* Lamarck. (Delessert Recueil. t. 28, f. 1).

Loc. New Holland (Lamarck.) New Zealand (Beck).

12. *B. obtusus,* Reeve. (Conch. Icon. t. 79, f. 583).

Loc. Australia.

PUPA.

1. *P. pacifica,* Pfeiffer.

Loc. "Sir Charles Hardy's Islands (Tucker)," Pfeiffer—where Mr. Macgillivray also found it about roots of grass and bushes in 1844. Under dead leaves at roots of trees in Sunday Island, and Lizard Island (Macgillivray).

Balea.

1. *B. Australis*, Forbes. (Voy. Rattlesnake, t. 2, f. 9).
   Loc. Port Molle (Macgillivray).

Vitrina.

1. *V. Cuvieri*, Ferussac. (Hist. t. 9, f. 8, and t. 9 A, f. 1, 2).
   Loc. Australia.
2. *V. Freycineti*, Ferussac. (Hist. t. 9 A, f. 3, 4, 9, and t. 9 B, f. 2).
   Loc. Port Jackson.
3. *V. robusta*, Gould.
   Loc. East coast of New Holland.
4. *V. nigra*, Quoy and Gaimard. (Voy. Astr. ii. t. 11, f. 8, 9).
   Loc. Port Western and King George's Sound (Quoy and Gaimard).
5. *V. Strangei*, Pfeiffer.
   Loc. Under logs in the brushes at Brisbane Water, New South Wales (Macgillivray).
6. *V. Verreauxii*, Pfeiffer.
   Loc. Australia (Verreaux).

Succinea.

1. *S. Australis*, Ferussac. (Hist. t. 11, f. 11).
   Loc. Australian Isles. Van Diemen's Land (Quoy and Giamard). Mount Eliza, Swan River (Priess, apud Menke).

Helicina.

1. *H. Gouldiana*, Forbes. (Voy. Rattlesnake, t. 3, f. 3).
   Loc. In the "Two Isles" on the N.E. coast of Australia (Macgillivray).

J. & W. Boone, Publishers, London, 1852.

PUPINA.

1. *P. bilinguis,* Pfeiffer.

Loc. About roots of trees among leaves at Cape York (Macgillivray). Blackwood Bay, and Restoration Island (Brit. Mus.)

2. *P. Thomsoni,* Forbes. (Voy. Rattlesnake, t. 3, f. 2).

Loc. Fitzroy Island (Macgillivray).

CYCLOSTOMA.

1. *C. Australe,* Gray.

Loc. New Holland.

2. *C. vitreum,* Less. (Sowerby, Thes. Conch. t. 30, f. 252).

Loc. Dunk Island; Frankland Isles; Green Island: on leaves and trunks of trees (Macgillivray). New Ireland (Hinds).

3. *C. bilabre,* Menke.

Loc. East coast of New Holland (Lehmann).

4. *C. fimbriatum,* Lamarck. (Delessert Recueil. t. 29, f. 12).

Loc. New Holland.

5. *C. multilabris,* Lamarck. (Delessert Recueil. t. 29, f. 14).

Loc. New Holland. Sowerby considers this to be a monstrosity—(of what?)

III. DESCRIPTIONS OF SOME NEW SPECIES OF SHELLS, DISCOVERED DURING THE VOYAGE OF THE RATTLESNAKE.

HELIX BRUMERIENSIS. Tab. ii. fig. 1. a, b.

Testa imperforata, globosa-conoidea, crassa, lævigata (sub lente granulato-striata) alba, ad aperturam nigra;

spira obtusa, conoidea; anfractus 4, convexiusculi, rapide accrescentes, ultimus basi subcompressus; apertura perobliqua, oblonga, intus alba; peristoma late reflexum, nigrum. Diam. maj. 28, min. 23, alt. 23, millem. (Mus. Brit.)

This remarkable shell resembles a dwarf *H. hæmastoma* in shape; it is of a porcelain white except at the aperture, which has a broad reflexed lip of a deep brown-black hue, both within and without. It is a very interesting species, indicative of the Indian affinities of the New Guinea fauna. A single specimen was taken in August 1849, on a bread-fruit tree in Brumer Island, S.E. coast of New Guinea.

Helix divisa. Tab. ii. fig. 5. a, b.

Testa obtecte perforata, lenticulari-depressa, orbicularis, carinata, crassiuscula, superne fulva, radiato-striata, minutissime granulata, carina acuta, superne subcrenulata, basi convexa, nitidissima, griseo-albida, radiatim substriata ad umbilicum declivens; spira convexiuscula; anfractus 5, planulati; apertura angulato-lunaris, intus margaritacea; peristoma simplex, basi incrassatum, ad columellam expansiusculum. Diam. maj. 23, min. 20, alt. 11, mill. (Mus. Brit.)

A *Helix* of the *Caracolla* section, allied to the *C. panayensis* of Broderip. Found on the ground at the roots of trees, in the South-East Island of the Louisiade Archipelago.

Helix Louisiadensis. Tab. i. fig. 8. a, b.

Testa imperforata, globoso-turbinata, solidiuscula, sub lente rugosa, albida, fasciis variis purpureo-fuscis ornata; spira conoidea, rubescens; anfrac. 5 convexiusculi, ultimus magnus, paululum deflexus; apertura ovata, intus nitide

livida, peristoma expansum, reflexum, sordide violaceum, margine externo sinuato, columellari incrassato, dilatato, subsulcato. Diam. maj. 26, min. 21, alt. 20, mill. (Mus. Brit.)

This remarkable snail has a tendency towards a trochiform contour. The ground colour appears as a white band on the body whorl marking its most prominent portion just below the centre. The sinuation of the outer lip and impression of the whorl behind the peristome, give a slightly ringent aspect to the mouth. It is very distinct from any known species; its affinities are more with Australian than with Philippine forms. It was taken on a tree in the South-East Island of the Louisiade Archipelago.

HELIX YULEI. Tab. ii. fig. 6. a, b.

Testa profunde umbilicata, depresso-globosa, solida, striata, sub epidermide fulvo-alba, fasciis castaneis cingulata; spira sub-depressa, obtusa; anfractus 6 convexiusculi; apertura subcircularis; peristoma nigrum, expansum, margine basali reflexo, columellari dilatato, umbilicum subtegente. Diam. maj. 37, min. 27, alt. 25, mill. (Mus. Brit.)

This handsome species is of a rich fulvous hue, with dark chestnut bands and a deep chestnut umbilicus, partly covered by the reflexion of the nearly black lip. It is allied to the *H. Incei*, a well known north-east Australian species. It was found in hollow trees, and under logs and stones at Port Molle, in the same region.

HELIX MACGILLIVRAYI. Tab. iii. fig. 1.

Testa imperforata, trochiformis, carinata, striis minutis spiralibus ornata, pallide fusco-carnea, punctis nigris albo-occellatis sparsa; spira conica; anfractus 6 planati,

ultimus carinatus, basi subplanatus; apertura oblique oblonga, intus brunnea, margine externo bisinuato; peristoma album, incrassatum, infra reflexum; columella basi rufescens. Diam. maj. 23, min. 19, alt. 21, mill. (Mus. Brit. and Geol.)

Of all Australian Helices, this is perhaps the most curious. Its outline and aspect are singularly like those of a *Trochus* of the *Ziziphinus* group. The colour is also very singular, being a yellowish flesh hue deepening on the base to rich brownish-yellow, and speckled irregularly with minute black dots which are areolated with white, the white ring being largest on the side towards the mouth. The fine striæ that encircle the body are also very curious. The outer lip of the aperture seems as if it had been dented in two places. Behind the white thickened peristome, internally is a dark brown band, which is seen through the shell as a dark blackish green stripe. The edge of the outer lip declines to join the body whorl a little below the keel. It was found on trunks and branches of trees in the Frankland Isles.

HELIX DUNKIENSIS. Tab. ii. fig. 7. a, b.

Testa umbilicata, depresso-globosa, subcarinata, solida, radiato striata et subtilissime granulata, flavida; spira late depressa, convexiuscula, apice obtusa; anfractus 6 convexiusculi, ultimo obsolete carinato; apertura lunaris, intus alba; peristoma superne rectum, margine basali margine columellarique sub-reflexis, umbilicus profundus, conspicuus, vix obtectus. Diam. maj. 24, min. 21, alt. 16, mill. (Mus. Brit.)

This snail strikingly resembles some Illyrian forms. It has affinities with *H. coriaria*, a species said to be from Ceylon. It was taken under stones and about roots of trees in Dunk Island, on the N.E. coast of Australia.

HELIX FRANKLANDIENSIS. Tab. ii. fig. 2. a, b.

Testa aperte-umbilicata, tumido-depressa, nitidissima, superne radiatim striata, cornea, fasciis angustis transversis distantibus fulvis; spira angusta; anfractus 5 planiusculi, ultimus rotundatus, antice vix descendentes; apertura rotundata; peristoma simplex, vix acutum, rectum, margine columellari non reflexo. Diam. maj. 26, min. 21, alt. 14 mill. (Mus. Brit.)

This beautiful snail is of a brightly shining yellowish or greenish horn colour. The whorls of its spire are small, but the body whorl, whilst preserving a wide diameter throughout, gradually increases in trumpet-like manner to the round mouth. It belongs to the same group with *H. olivetorum* and *H. nitida*, and is allied to the Australian *H. ptycomphala*. It occurs about the roots of trees in the Frankland and Lizard Islands.

HELIX IULOIDEA. Tab. ii. fig. 4. a, b, c, d.

Testa late et perspective umbilicata, orbicularis, superne depressa seu subconcava, rufo-cornea, regulariter costulata; anfractus $4\frac{1}{2}$ convexiusculi, ultimus tumidus, rotundatus; apertura lunaris; peristoma simplex, acutum. Diam. maj. $4\frac{1}{2}$, min. 4, alt. 3 mill. (Mus. Brit. & Geol.)

This curious little snail, resembling a rolled-up *Iulus*, and reminding us of our own *H. rotundata* and its allies, was found under a stone at Port Molle.

HELIX INCONSPICUA. Tab. ii. fig. 3. a, b, c.

Testa perforata, depresso-convexa, lævigata, nitidiuscula, pallide cornea, basi subcompressa; anfractus 6, planiusculi; spira obtusa; apertura lunaris; peristoma rectum, simplex, margine columellari reflexo: umbilicus minutus, subobtectus. Diam. maj. 8—min. 7—alt. 5 mill. (Mus. Brit.)

A very inconspicuous ordinary-looking little shell, its upper surface recalling the aspect of *H. alliaria* but with more convexity and no lustre, and its base that of *H. crystallina*. It was found, apparently gregarious, under dead leaves in an islet in Trinity Bay.

BALEA AUSTRALIS. Tab. ii. fig. 9. a, b.

Testa dextrorsa, rimata, subcylindracea, turrita, decollata, dense capillaceo-costulata, corneo-lutea, maculis obscuris flavidis; sutura impressa; anfractus 11, convexiusculi; apertura pyriformis, columella triplicata, plica inferior maxima, conspicua, elevata, acuta, spiralis; peristoma continuum, solutum. Long. 18—Diam. 4—Apert 4 mill. (Mus. Brit. & Geol.)

This very remarkable shell, the first of its genus discovered in Australia, differs from all its congeners. It has exactly the aspect of a *Clausilia*, but the mouth is not furnished with a clausium. It was found under stones at Port Molle.

PUPINA GRANDIS. Tab. ii. fig. 10. a, b, c, d.

Testa ovato-subcylindrica, superne lævigata, inferne rugulosa, sordide-rufa; spira obtusa; anfractus 6, secundus tumidus, obliquus, ultimus super aperturam planatus; apertura rotundata; peristoma læte aurantiacum, rimatum, crassum, dorsaliter canaliculatum, infra columellari, profunde sinuatum et in canali contorto excavatum; canalis alter minutus ad partem superiorem et externam aperturæ; callus columellaris expansus, appressus. Long. 30, Diam. 15, Apert. 7 mill. (Mus. Brit. & Geol.)

This, the giant of its genus, is perhaps the most remarkable land shell discovered during the voyage. It differs from all other *Pupinæ* in having an unpolished surface. It was found in the South-East Island of the Louisiade

W. H. Baily

Printed by Hullmandel & Walton

T. & W. Boone, Publishers, London, 1852.

Archipelago, under dead leaves chiefly about the roots of trees.

PUPINA THOMSONI. Tab. iii. fig. 2. a, b.

Testa ovata, polita, nitidissima, translucens, hyalina, solidiuscula; spira obtusa; anfractus 5, duo ultimi majores; apertura orbicularis; peristoma album, crassum, solutum, canalibus duobus interruptum; canalis superior ad partem superiorem et externam aperturæ, inferior major, basalis, marginibus disjunctis et in dorsum anfractus prolongatis. Long. $7\frac{1}{2}$, diam. $4\frac{1}{2}$, apert. 2 mill. (Mus. Brit.)

This remarkable and beautiful little *Pupina* is most nearly allied to the *P. bilinguis* of Cape York. From that species (which is larger) it differs, however, very materially, most especially in the position of the inferior or basal canal of the aperture which is here placed like the canal of a whelk, but in *P. bilinguis* is very small and placed high up, cutting as it were the columella. The curious manner in which the margins of the canals are prolonged on the back of the body whorl like parallel and somewhat diverging walls is also a singular feature of this species, which is dedicated to Dr. Thomson, surgeon of the Rattlesnake, and an excellent botanist. It was found among dead leaves at the roots of trees in Fitzroy Island.

HELICINA STANLEYI. Tab. iii. fig. 4. a, b.

Testa lenticularis, supernè inferneque convexa, orbicularis, acutè carinata, fusco-carnea, spiraliter striata; spira obtusa; anfractus $4\frac{1}{2}$ leviter convexiusculi; basis imperforata, centraliter lævigata, alba; apertura oblique sublunata, angulata; peristoma simplex, tenue. Diam. maj. $6\frac{1}{2}$, min. 6, alt. 5 mill. (Mus. Brit.)

Found on the leaves and trunks of trees and bushes (especially *Scævola Kœnigii*) in the Duchateau Isles,

Louisiade Archipelago. Dedicated to the late Captain Owen Stanley, R.N.

HELICINA LOUISIADENSIS. Tab. iii. fig. 5. a, b.

Testa depresso-globosa, superne inferneque convexa, orbicularis, obsolete sub-angulata, pallide aurantiaca, sub lente spiraliter striata; spira obtusa; anfractus $4\frac{1}{2}$, vix convexiusculi; basis imperforata, centraliter sub-impressa; apertura lunata, inferne subangulata; peristoma incrassatum, aurantiacum, reflexum. Diam. maj. $4\frac{1}{2}$, min. 4, alt. 3 mill. (Mus. Brit.)

On Round Island in Coral Haven, Louisiade Archipelago, under stones. This pretty little *Helicina* is nearly allied to some Philippine species.

HELICINA GOULDIANA. Tab. iii. fig. 3. a, b.

Testa depresso-globosa, superne sub-conica, orbicularis, obsolete subangulata, flava seu rufa, spiraliter striata; spira prominens; anfractus 5, planati; basis imperforata; apertura sub-lunata, inferne angulata; peristoma incrassatum, subreflexum, album. Diam. maj. 6, min. $5\frac{1}{4}$, alt. $4\frac{1}{2}$ mill. (Mus. Brit.)

Under the bark of *Mimusops Kaukii*, in the "Two Isles," on the N.E. coast of Australia. Dedicated to the indefatigable illustrator of Australian ornithology.

RANELLA PULCHELLA. Tab. iii. fig. 6. a, b.

Testa turrita, utroque alata, acute-caudata, alba; anfractus tumidi, spiraliter striati, longitudinaliter nodulosocostati, costis crebris, lateraliter varicosi, varices compressi, aliformes, crenulati, striati, ad margines crenati; apertura ovato-rotunda, inferne longe-caudata; peristoma solutum. Long. 20, diam. 14, apert. 4 mill. (Mus. Brit.)

This beautiful shell was dredged in from 8 to 11 fathoms water, on a bottom of sand and shells between Cumberland Island I.i, and Point Slade (Lat. 21° S. Long. 149° 20′ E).

The spiral striæ that cross its whorls are grouped in pairs; their interstices are raised, and more or less finely crenulated; as they pass out on the expanded and wing-like varices they diverge, and the lobe-like projections that scallop the margins of the wings are separated from each other by each pair of diverging striæ. The fine ribs that cross the whorls are not present on the wings, nor on the back; they are nodulated at their decussation with the raised striæ. The wing-like varices of the whorls overlap each other alternately on each side of the shell. The only species to which it has affinity is the *R. pulchra*.

Scalaria Jukesiana. Tab. iii. fig. 7.

Testa lanceolato-turrita, gracilis, alba, lævis, nitida, longitudinaliter costata, costis lamellosis, reflexis, simplicibus, numerosis (in ult. anfrac. 20); anfractus 11, tumidi; sutura profunde impressa; varices nulli; apertura orbicularis, margine lævi. Long. 13, Diam. max. 14, apert 3 mill. (Mus. Brit.)

This beautiful little *Scalaria* is deserving of particular notice on account of the analogy and representation which it exhibits with the *S. clathratulus* of the seas of the Northern Hemisphere. It is dedicated to the author of the Voyage of the Fly.

New Genus—Macgillivrayia, Forbes.

Shell spiral, dextral, globular, thin, corneous, transparent, (in the only known species smooth or marked by obscure lines of growth) imperforate; spire not produced (with a sinistral nucleus?). Aperture oblong, entire, angulated below; peristome incomplete, thin, even-edged.

Operculum semicircular, horny, thin, composed of concentric layers with faint traces of a spiral structure at the centro-lateral nucleus, which is on the columellar

side; from it there runs a strait rib or process continued nearly to the outer margin, and indicated externally by a depression or groove.

Animal ample, provided with four very long and rather broad linear rugose (or ciliated?) tentacula; mantle produced into a long siphon; foot very large, expanded, truncate in front, bearing the operculum near its posterior extremity, but not accompanied by filamentous processes or lobes. A float. (Mus. Brit. and Geol.)

This very remarkable mollusk was taken in the towing net off Cape Byron, on the east coast of Australia, in Lat. 28° 40′ S., fifteen miles from the shore. It was floating and was apparently gregarious. Mr. Macgillivray states that it is furnished with a float in the manner of *Ianthina*. The largest specimens measure rather less than two lines in diameter. The shell is of a yellow horn colour (as is also the operculum), thin and transparent. It bears a striking resemblance to our much more minute *Jeffreysia opalina*. The four tentacula and the form of the very peculiar operculum also seem to indicate considerable affinity with the genus *Jeffreysia* of Alder, and an examination of the remains of the tongue extracted from a dried specimen shewed an arrangement and form of the lingual denticles very closely resembling that exhibited by *Jeffreysia*. On the other hand, the very distinct and long siphonal tube delineated in Mr. Macgillivray's drawing, taken when the animal was alive, would seem to refer this genus to some family probably near to *Cancellaridæ*. It is certainly entirely distinct in every respect from any known Gasteropod. It is a form of very great interest to the geologist, for in it we see the nearest representation of certain palæozoic (especially Lower Silurian) univalves hitherto referred to *Littorina*, but which, judging from their associates and the indications afforded by the strata

in which they are found, were assuredly either inhabitants of deep water or floaters in a great ocean like the Pacific.

I have dedicated this most interesting creature to my friend Mr. Macgillivray, its discoverer, whose researches have been productive of so much new and valuable contributions to all departments of zoological science.

I have named the species *M. pelagica*. Tab. iii. fig. 8. a, b, c, d. (Mus. Brit. and Geol.)

New Genus—Cheletropis, Forbes.

Shell spiral, turbinate, dextral, imperforate, spirally ridged or double-keeled and transversely wrinkled; spire prominent, its nucleus sinistral; aperture ovate, canaliculated below, its outer margin furnished with two claw-like lobes, the one central and formed by a prolongation of the margin between the keels of the body whorl, the other smaller and nearer the canal; peristome thickened, reflexed, forming a conspicuous margin.

Operculum none?

Animal unknown, but certainly floating, and probably pteropodous. This I infer from its habits, and from the analogy of the shell with *Spirialis*. (Mus. Brit. & Geol.)

The only known species, *C. Huxleyi*, (dedicated to Mr. Huxley, Assistant Surgeon of the Rattlesnake, and now eminent for the admirable anatomical researches among marine invertebrata which he conducted during the voyage,) is very minute, being not more than the $\frac{1}{24}$th of an inch in diameter. It is translucent and of a brownish-white hue. Its aspect is that of a *Turbo* in miniature. The whorls are tumid, the spire prominent; the body whorl is belted by two prominent keels, one of which is continued on the whorls of the spire: between, above, and below these keels are transverse membranous raised ridges, which in the central division of the body whorl are curved for-

wards. This curvature corresponds with the projection of the curious incurved claw-like lobe that proceeds from the central portion of the lower lip. Towards the base of the aperture is a second and similar but smaller lobe, below which is the short but broad and well-marked canal. The entire lip is marginated by the thickened and reflected peristome. I believe this curious floating shell will throw some light on the true nature and habits of several palæozoic types. It was taken in the towing net, gregarious, in the sea off Cape Howe, the south-east corner of Australia. Tab. iii. fig. 9. a, b.

Contents of Plates of New Shells.

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6. —— *Yulei*	6. *Ranella pulchra*
7. —— *Dunkiensis*	7. *Scalaria Jukesiana*
8. —— *Louisiadensis*	8. *Macgillivrayia pelagica*
9. *Balea Australis*	9. *Cheletropis Huxleyi*
10. *Pupina grandis*	

1 2 Pachyrhynchus Stanleyanus. White.
3 4. Drusilla Mylæcha. Westw
5. Eusemia-Mariana. White.

W.Wing, ad. nat.lith.

Hullmandel & Walton, Litho

No. VI.

DESCRIPTIONS

OF SOME

APPARENTLY NEW SPECIES OF ANNULOSA,

(COLLECTED BY MR. MACGILLIVRAY DURING THE

VOYAGE OF H.M.S. RATTLESNAKE,)

BY

ADAM WHITE, F.L.S.,

ASSISTANT ZOOLOGICAL DEPARTMENT, BRITISH MUSEUM.

Among the very numerous Insects and Crustacea, collected by Mr. Macgillivray during the voyage of the Rattlesnake, the following have been selected for illustration; references to and descriptions of some of the Diptera, Homoptera, and Hemiptera, collected by him, have appeared in the Catalogues of the British Museum drawn up by Messrs. Walker and Dallas, while the names and descriptions of others will appear in catalogues in preparation. A fine species of the class Crustacea, discovered by him, has been described and figured in the Illustrated Proceedings of the Zoological Society. (*Cancer* [*Galene*] *dorsalis*, White.)

Insects. Coleoptera.

Chrysodema pistor, Laporte and Gory. Buprestidæ, t. 6, f. 33.

Hab. Australia (Cape Upstart). Mr. Macgillivray informs me, that the specimens of this species were observed by him coming out of a dead tree (Casuarina).

PACHYRHYNCHUS STANLEYANUS.* Tab. iv. fig. 1, 2.

Pachyrhynchus nigerrimus, maculis parvis squamosis plurimis viridiscenti-albidis.

Hab. Pariwara Islands, New Guinea. Four specimens.

Head between the eyes somewhat rugose, some of the rugose punctures with pale greenish white scales; an abbreviated longitudinal impressed line down the front. Beak short and thick (somewhat as in *Pachyrhynchus Cumingii*, Waterhouse). Thorax irregularly and somewhat coarsely punctured, the sides somewhat wrinkled in front, the punctures scaled, a triangular depression on the posterior part of thorax, the bottom is covered with scales, at least in some specimens, and there are three spots similarly scaled and placed somewhat transversely: the *Elytra* with eight to ten punctured lines, running somewhat irregularly, especially towards the sides, each elytra with ten, twelve, or more spots of scales, arranged longitudinally in spots on the sides, and largest towards the end. Under side of the mesothorax and metathorax with many greenish scales. *Legs* thick, polished, and with scattered grey hairs proceeding from the punctures.

I have named this somewhat "mourning" Pachyrhynchus after Captain Owen Stanley and his father, the late venerable Bishop of Norwich and President of the Linnean Society. Both of these gentlemen were fond of natural history, especially the father, who was a good observer of the habits of birds. The son, Captain Owen Stanley, was an accurate, though not very practised draughtsman; and I recollect with pleasure his pointing out to me, at one of the soirees at Brook Street, a volume of sketches (coloured)

* In memoriam Owen Stanley, in classe Britannica Navarchi, species hæc distincta et peculiaris nominatur.

made by him on one of his voyages, in which objects of natural history were ably introduced. He encouraged natural history researches.

HYMENOPTERA.

TRIGONALYS COMPRESSUS. Smith. Trans. Ent. Soc. Lond. n. ser. I. p. . pl. 16. f. 2.

Sphex compressa. *De Geer. Mem. III.*

Trigonalys bipustulatus. *Smith* (olim) *Ann. & Mag. Nat. Hist. VII.* (1851.)

Hab. Nest of *Polistes Lanio*. Brazil.

Among the Hymenoptera, few genera have created greater dispute than the anomalous genus *Trigonalys* of Westwood. Mr. Macgillivray one day brought to the British Museum the nest of a Brazilian Polistes. My friend, Mr. Frederick Smith, is well known for his profound knowledge of the Hymenoptera, Exotic and British, which, though he has studied them *only* fourteen years, are better known to him, perhaps, than to any other living Entomologist;—the instant that he looked at the nest, he exclaimed, "Why, here is *Trigonalys!*" and certainly a large, black-headed creature, not very like Polistes, protruded from one of the cells. Mr. Smith, on the 7th April, 1851, communicated this piece of information to the Entomological Society of London, and in their Transactions his brief memoir was lately printed. I cannot do better than give it in Mr. Smith's own words. Mr. Smith, subsequently to the reading of the paper, ascertained that the species had been described in the great work of De Geer, a book of which it would be well to have a condensed new edition. Mr. Smith says:

"John Macgillivray, Esq., Naturalist to Her Majesty's Ship Rattlesnake, lately presented to the British Museum the nest of a South American species of *Polistes*, which he says is very abundant at St. Salvador, where even in the streets it attaches its nest under the eaves of houses; the species is the

Polistes Lanio of Fabricius, and in all probability the *Vespa Canadensis* of Linnæus; a specimen of the species is preserved in the Banksian Cabinet. On examining the nest, I found it consisted as usual of a single comb of cells, having in the centre at the back a short footstalk, by which the nests are attached in their position; the comb contained sixty-five cells, the outer ones being in an unfinished state, whilst twenty-two of the central ones had remains of exuviæ in them, and one or two closed cells contained perfect insects ready to emerge; about half a dozen of the wasps had the anterior portion of their bodies buried in the cells, in the manner in which these insects are said to repose. In one cell I observed the head of an insect evidently of a different species, it being black and shining. On extricating it, I discovered it to be a species of *Trigonalys*; I subsequently carefully expanded the insect, and it proved to be the *Trigonalys bipustulatus*, described by myself in the Ann. and Mag. of Natural History, vol. vii., 2nd Series, 1851, from a specimen captured at Para by Mr. Bates, now in the possession of William Wilson Saunders, Esq. The insect was not enveloped in any pellicle, nor had the cell been closed in any way; the wings were crumpled up at its side, as is usual in Hymenopterous insects which have not expanded them, proving satisfactorily that it had never quitted the cell, and that *Trigonalys* is the parasite of *Polistes*.

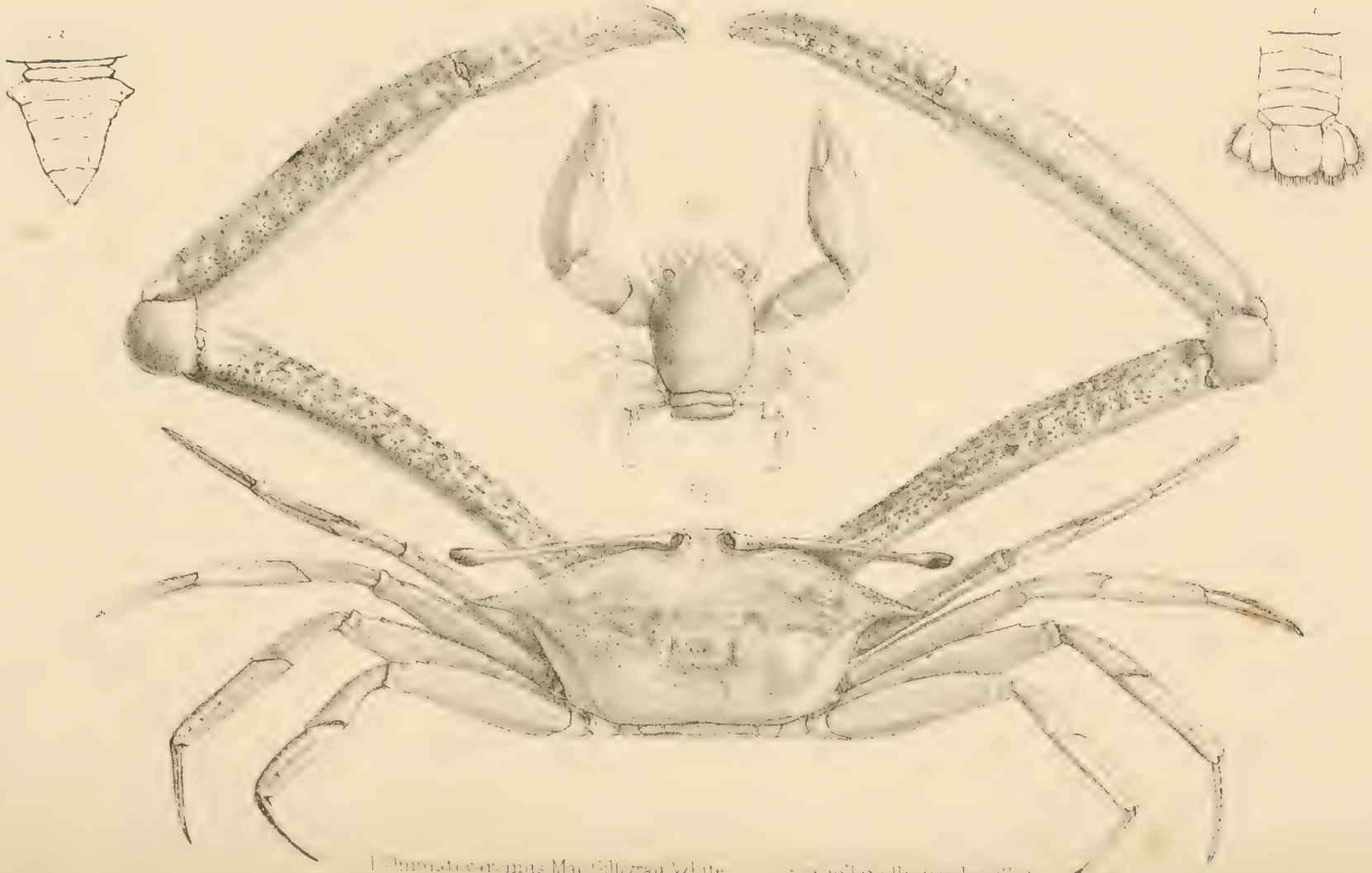
This discovery is one of much interest, proving the relationship of the insect to be amongst the pupivora, to which family it had been previously assigned by Mr. Westwood, see Vol. III. Ent. Trans. p. 270. The specimen is seven lines in length, entirely black, the head shining, the thorax and abdomen opaque, and having two white maculæ touching the apical margin of the basal segment above; the wings are smoky, the antennæ broken off. Of one of them I found subsequently seventeen joints—the perfect insect in the possession of Mr. Saunders having twenty joints."

Lepidoptera.

Drusilla Mylœcha, Tab. iv. fig. 1, 2.

This fine butterfly* was found flying in considerable plenty in the woods of one of the islands of the Louisiade Archipelago; it forms a very interesting addition to a genus, of which but few species are known, and is allied to the *Drusilla Catops* of Dr. Boisduval, described and figured

* Described (but not figured) by Mr. Westwood, in the Transactions of the Entomological Society of London, New Series, Vol. I., p. 175 (1851), from Mr. M.'s specimens in the British Museum. Mr. W. felt anxious to describe this striking Drusilla.



1. Pinnotheres ornatus Mac Gillivray White. 2. P. pellucidus Leach. Ziegler

in the "Voyage de l'Astrolabe." The upper sides of the wings of the *Drusilla Mylœcha* are of a pure white with a silky lustre, the front edge of the fore wings margined with deep brown both above and below; in the male there is a slender white line on the upper side running close to the edge, and extending beyond the middle of it; the two discoidal veins in the male are brown on the upper side, and the edge of the upper side of the lower wings is brown. The under side of the lower wings has a dark brown band at the base, widest close to the attachment of the wing and narrowing to a large ocellus which it surrounds in the form of a narrow brown ring; the black ocellus has a very small white pupil with a slight bluish crescent on the inside, and is surrounded by a fulvous ring; there is a second black ocellus nearer the hind edge than the middle, with a small white pupil and a wideish fulvous ring, separated from the white of the wing by a narrow brown ring; head, antennæ, legs, and thorax in front brown; palpi fulvous.

The figures are of the size of nature, and carefully drawn by Mr. Wing.

Eusemia Mariana, Tab. iv. fig. 3, 4.

*E. alis cœrulescenti-nigris; anticis albo-fasciatis et maculatis, posticis croceo-maculatis.**

Upper wings black, with a slight bluish tinge; a wide band extends across the wing before the middle; it is white with a slight yellowish tint, at the lower edge of the wing it is abruptly narrowed; behind the middle of the wing, and between it and the tip, are from five to six pale yellowish white spots, the four or five outermost the smallest, and one or two of them sometimes obsolete;

* Filiæ meæ "Marian Frances White," speciem hanc pulchram d. d. descriptor.

between the base and the band a narrow bluish grey line extends across the wing, and behind the band, at an equal distance, there is another short, waved, bluish grey line running down to the inner margin. The margins of the band and spots are bluish grey. The lower wing is narrowly black at the base, with a transverse band of a king's yellow colour; this is the widest on the inner edge, near its outer end there is an angular black spot; the apical half of the wing is black, with numerous king's yellow spots arranged in two lines, two spots about the middle connected and notched with black. Head, thorax, and base of abdomen black, rest of abdomen of a king's yellow colour.

Mr. Macgillivray took two specimens of this fine species. One flew on board when the ship was to the north of Cape Weymouth; the other was taken at Cape York: the figure is of the natural size.

Cocytia Durvillii, Boisd. Monog. des Zygénides, t. 1, fig. 1.

This is an abundant species in the Louisiade Archipelago, flying on shore in the daytime among trees (as D'Urville remarked it did in New Guinea); and it frequently came on board the Rattlesnake, even when distant from the shore two or three miles. It flies heavily like a moth, and is easily caught. This beautiful insect is one of the finest found by Mr. Macgillivray. Only three specimens are recorded: those discovered by Admiral d'Urville, and described by Dr. Boisduval; Mr. M. brought home two, deposited with the rest of his collection in the British Museum.

Crustacea. Malacostraca: Decapoda.

Ommatocarcinus Macgillivrayi. Tab. v. fig. 1.

Carapace more than twice as wide as long; the sides in front extended into a long slightly bent spine. The frontal portion between the pedicles of the eyes is narrow, much as in *Macrophthalmus*, it slopes down towards the mouth, and is deeply notched at the sides for the reception of the eyes; the fore-edge is doubly notched in the middle, there being a slight tooth between the emarginations. The epistome not so prominent as the lower margin of the orbit; the inner antennæ, with the basal joint, long (the others broken off). The eye-pedicles very long and cylindrical, thickest at the base, slightly bent, somewhat thickened towards the end, so long, that, when bent back, the eye extends a little beyond the end of the spine. Mouth formed nearly as in Gonoplax, the third joint of the jaw-feet wider than long. Abdomen seven-jointed, the first joint scarcely visible, shaped much as in Gonoplax, but rather wider, the base of the terminal joint longer than the sides. Anterior legs two and a half times as long as the Carapace, measuring it from spine to spine, the arm long and triangular, the upper portion more or less thickly covered with small papillæ, and having a nearly obliterated spine about the middle; the wrist smooth, roundish, with a large blunt tooth on the inside; hands somewhat flattened, widest at the base of the claws, with a broad ridge on the inside, the edge of it rough with small papillæ; the upper edge of hand rough with small papillæ; the claws lap over each other at the tips, and are irregularly toothed on the inside; the fixed claw of the right hand bent at the base, so as to leave a considerable space when the other is closed upon it; upper part of arm, hand, and moveable claw pretty thickly spotted with red, epistome

orbits and greater part of the upper surface of carapace spotted with red, sides and hind part of carapace white; upper edge of the orbit covered with small papillæ; a tolerably prominent ridge extends across the carapace before the middle. Four hind pairs of legs long, slender, compressed, the upper edges of the second and third pairs fringed with hairs, as well as the lower edge of the two terminal joints, the claws long, thin, and somewhat bent.

Hab. Port Curtis. Shoal-water, mud-banks.

This fine Crustacean is allied to Gonoplax and Curtonotus; and being one of the most prominent species sent home by Mr. Macgillivray, is selected for description here; the figure is of the size of nature.

Porcellanella triloba. Tab. v. fig. 2.

Carapace somewhat flattened, the front produced into three large teeth or lobes; the intermediate the widest and most prominent; the sides of the outer lobes rounded before the eye; carapace longer than wide, widest a little behind the insertion of the antennæ, the upper surface smooth, polished, with some transverse scratched lines, which are slight and irregular, they are most observable in front and on the sides, behind it is somewhat notched in the middle. External antennæ long, longer than twice the breadth of the carapace, inserted in a sinus behind the eye, the basal portion formed of three joints, the first projecting beyond the sides of the carapace, the second wider and longer than the first, third short and thick at the end; the terminal part of antennæ long, thread-like, and formed of very numerous articulations; the eyes large, and with a short pedicel. Anterior legs long and smooth, the pincers overlapping each other at the end, their inner edge rough, scarcely toothed; from before the base of the inside of the moveable claw a thickish line of hairs extends

about half way down the hands, which bulge, and are rounded on the inside, but on the outside are straightish or slightly waved, and rather sharply keeled; the second, third, and fourth pairs of legs are somewhat compressed, and terminate in claws with four longish hooks on the inside; posterior pair of legs folded over the back, narrow, with the second joint somewhat bent upwards.

This curious species was dredged by Mr. Macgillivray off Cape Capricorn, in lat. 23° 25′ S. long. 151° 12′ E., in 15 fathoms, the bottom being muddy sand and shells. It is allied to the species of the second section of the genus Porcellana, as detailed by Professor Milne Edwards in the second volume of the "Histoire Naturelle des Crustacés," but has characters sufficient to constitute a new subgenus, to which may be applied the name *Porcellanella*. The figure represents it of twice its natural size.

P. S.—The figures have been carefully drawn from the originals by Mr. William Wing, so well known as a Zoological Draughtsman, and will at once explain my imperfect descriptions.

THE END.

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